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MEDICAL IDEALS IN THE ANCIENT WORLD

THE OPENING LECTURE OF THE 84TH SESSION OF THE MEDICAL
FACULTY OF MCGILL UNIVERSITY

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I DESIRE first of all to give an expression, necessarily imperfect, of my appreciation of the honour you have conferred upon me in inviting me to deliver the opening address of this eighty-fourth session of the Medical Department of McGill University. It is indeed a two-fold honour, for it is an honour to be invited to speak in the halls of a faculty which has so long and so splendid a record of progress and accomplishment as the Medical Faculty of McGill. And it is again an honour, more than personal, that I should be invited as a representative of a sister faculty to inaugurate your session of 1915-16. I may, I am sure, assume that your invitation is a testimony to the sincerity of the mutual esteem and amity which govern the two universities in all their relations, and an earnest of the continuation of friendly coöperation in all matters pertaining to the progress of medical education in Canada.

I desire also to congratulate the Medical Faculty and students of McGill on this splendid building, so well adapted to its purpose, so bountifully equipped, and withal an architectural ornament to the university, which may justly be proud of it. Truly those of us who are less sumptuously housed may be pardoned if with difficulty we suppress some feelings of that uncharitable emotion, envy, but we can suppress them because we know from past achievement that McGill has both teachers and students who will fully utilize their opportunities. Could the members of that small but

enthusiastic group who in 1823 founded the Montreal Medical Institution but "revisit the glimpses of the moon", with what satisfaction would they regard their offspring now grown to maturity, broad-shouldered, well set-up and handsome. Those men, Robertson, Stephenson, Caldwell and Holmes, builded wisely, and it is largely to their foresight in transferring their institution to McGill University as the first medical faculty that the splendid position of this university in medical education is due. They anticipated in 1829 the movement whose completion we are but now witnessing on this continent, the transformation of the better proprietary schools into university schools, with all the advantages that implies. Medicine has to-day become too complex, too extensive to be adequately taught by schools started as business ventures; it is only in schools which form an integral part of a progressive university or which possess an adequate endowment that the standards of medical education can be maintained and advanced. McGill is fortunate in that it anticipated so early this essential in medical education, and has been able to maintain without interruption, that relation of the medical school to the university without which the best results cannot be accomplished. Utility is not the only factor in medical education. There is in it also an academic element, without which progress is impossible and which finds its most congenial atmosphere in university surroundings.

But in thus commending the foresight of the founders of the medical department, I would not neglect what is due to those who in later days have had the guidance of affairs. For to them also McGill is deeply indebted for the honourable position she occupies among medical schools. To single out one or two names in this connexion might seem invidious when all members of the faculty have contributed so largely, but the faculty itself has from time to time set its stamp of approval upon certain names, for the interest they have shown in the advancement of medical education not only in their university, but throughout the whole Dominion. I may, therefore, without embarrassment mention the names of Howard and Craik, now no longer with you, and those of Roddick and Shepherd, still active in the good cause and, we trust, long to be spared to give us the benefits of their experience and counsel. Nor would I pass over in silence the name of Dean Birkett, who, with colleagues from this university, from Toronto and from Queen's, is demonstrating to the world the loyalty of Canadian universities and the unity of the Empire in this great crisis that has been forced upon us by Prussian arrogance.

Of the war and the part now being taken so loyally and efficiently by the medical schools of Canada, I need not speak. We are confident that sooner or later the cause for which we and our brave allies are sacrificing our best and bravest, the cause of freedom, honour and idealism, will prevail. But what of the future, what is the outlook for medicine as the result of this war? Prophecy is dangerous work, but one result seems to be so evident that I may venture to comment upon it. Germany long ago perceived the importance of encouraging scientific investigation as the handmaid of the arts, and by the encouragement and utilization of science she had gone far towards achieving for herself a monopoly in certain lines of scientific progress and its application. Students thronged her laboratories from all parts of the world, attracted by the reputation and activity of her teachers, and there was a tendency to look to Germany as a Mecca to which all the faithful must sooner or later make a pilgrimage. In respect to certain articles of manufacture, such as dye-stuffs and some important therapeutic substances, we had become absolutely dependent upon Germany. This war has brought us to a painful realization of our dependency and we are learning that we must become self-reliant and self-sufficient. Germany's scientific dominance is a thing of the past and we Canadians must seriously set ourselves to the task of contributing our quota to progress by the greater encouragement of scientific research and the application of its results. Progress in medicine, especially, must not be allowed to languish and we must take greater part in its maintenance and advancement. In the scientific laboratories you will find your opportunities, for it is through the laboratories that progress has come to medicine in the past, and it is through them that it will come in the future. A beginning has been made, interest has been awakened in medical research, but more than that is needed. It must become a prominent feature of our professional activity if one of the important lessons this terrible war is teaching us is not to be passed, unheeded.

It is customary on occasions such as this that the speaker should be more or less homiletic, giving freely of advice and warning, and perhaps extolling the noble aims and self-sacrifice of the profession you purpose to enter. "Good wine," however, "needs no bush," and the profession of medicine needs no panegyric to confirm you in your choice. As to advice and warning, so much as is individual—and I may hope that in your cases little of this will be required—must necessarily be administered by your teachers, so that there is left for me only what is general, and generalities are too often un-

impressive. Furthermore, these generalities have been repeated so frequently, with but slight variation according to the idiosyncrasies of the speakers, that were I to recite them again, even with further variations due to my particular idiosyncrasies, I might, with no little reason, be accused of plagiarism.

I feel myself, accordingly, on the horns of a dilemma. Admonition I would willingly bestow, but I fear comparisons, and so I purpose to seize boldly the horns of the proverbial dilemma, to make no pretensions to originality in what I may say, but to present to you the ideals set up by teachers of medicine in former days for the guidance and emulation of their pupils. I shall cite for your edification, not the teachers of a century ago, not even those of the sixteenth and seventeenth centuries when medicine awoke from the coma in which she had lain throughout the Middle Ages, but I shall go back some three and twenty centuries to the days when medicine began to be a science, and was emancipating itself from the burden of superstition under which it had languished in still earlier times. It may be thought, perhaps, that in these progressive days when the science and art of medicine are advancing by leaps and bounds, we have little to learn from those who practised and taught four hundred years before the Christian era. Their theories of disease were undoubtedly erroneous, their practice in many respects imperfect, but their knowledge of human nature was as thorough as our own and their ideals at least as high. It is especially of ideals that I wish to speak, for no profession demands higher ideals than that of medicine. In no other profession is one brought into such intimate relations with one's clients, no member of society has greater responsibilities than the physician and to those of you who are seeking qualifications for entering the medical profession I wish to try to bring a realization of these responsibilities. Reverence for the teachings of past ages has not quite passed away, and perhaps if I show you how high were the standards of conduct set for the physician many hundred years ago, your reverence for antiquity may gain for them greater consideration than would be granted a more modern exposition of medical ideals.

It is to Greece that, rightly or wrongly, we are accustomed to look for the foundations of all that we prize in literature, art and science, and it was in Greece, in the little island of Cos off the coast of Asia Minor, that the foundations of modern medicine were laid by Hippocrates. Of men who have made an epoch in the history of human achievement we long for personal details. We would, for

our example and profit, know of their early training, of their youthful associations, of their virtues both domestic and public, and even of their vices. We would like to know them in their relations to their fellowmen, as units in the complex of humanity. But of Hippocrates little that is authentic has come down to us, so little that one critic has even dared to question his actual existence, notwithstanding the fact that contemporaries, such as Plato and Aristophanes, refer to him under circumstances that sufficiently indicate the great renown to which, as a physician, he had attained even during his lifetime. What we actually know of him has been summed up by a medical historian in few words—"He lived in the time of the Peloponnesian war and he wrote works on medicine in Greek, in the Ionic dialect." Myth and legend have, of course, multiplied about his name, and many acts, sayings, and writings have been attributed to him of which he was undoubtedly guiltless. What we now term the Hippocratic writings consist of more than fifty treatises, but even a superficial examination of them reveals such differences of style and inconsistencies in both theory and practice, that one is forced to the conclusion that one has to do with a collection of treatises by different authors, rather than with the writings of a single man. Indeed the result of modern criticism has been to diminish more and more the number of treatises that can be ascribed to Hippocrates and the final word on this question of authenticity has not yet been spoken. The question is an interesting one for the historian of medicine, but is of but minor importance for the present purpose, since all of the treatises to which I shall refer, if they cannot be directly ascribed to Hippocrates, were at least written by members of the Hippocratic school, and probably were composed before the end of the fourth century before the Christian era. It is therefore the ideals of that time which they present to us, and remote though it be, I think you will find its standards worthy of adoption.

Most familiar to-day of all the Hippocratic writings is "The Oath," a document that should be writ large upon the walls of every medical school, instinct as it is with the spirit of true benevolence. Let me quote it to you:

"I swear by Apollo, the physician, by Asclepias, Hygeia and Panacea and by all the gods and goddesses, taking them to witness that I will fulfil, according to my power and judgement this oath and bond. My instructor in this art I shall esteem as I do my parents. What I have I shall share with him, and if the necessity arise I shall make provision for his needs. His sons I shall regard

as brothers and, if they desire to learn this art, I shall instruct them in it without reward or contract. I shall impart the precepts, the oral teaching, and all the rest of the instruction to my sons, to those of my instructor, to pupils bound by contract and by oath in accordance with the custom in medicine, and to no others. According to my ability and judgement I shall direct the regimen of my patients for their advantage, abstaining from all evil and wrong-doing. I shall give no deadly drug to any one, not even to one desiring it, nor will I suggest such a desire. Similarly I shall not administer an abortive to any woman. I shall pass my life and practise my art in uprightness and holiness. And I shall never operate for stone, but will leave this to those who practise it. And whatsoever houses I may enter, my object shall be the good of my patients, keeping myself from all wilful wrong and destruction, and especially from all lustful desires for the bodies of both women and youths, whether slaves or free. And in the practice of my profession or even outside it, whatever I see or hear concerning the lives of men that should not be divulged, of such things I shall keep silence, regarding them as secrets. And if I fulfill this oath and do not fail in it, may I reap the reward both in my life and practice by the esteem of all men for all time, but if I be foresworn, may the opposite be my lot."

One must of course make some allowance for the conditions existent in B.C. 400 in applying this oath to the conditions of to-day. Until shortly before the time of Hippocrates the profession of medicine was a closed corporation to which only the sons of those who could trace descent from Æsculapius were eligible, and even in Hippocrates' time, when outsiders began to be accepted, their acceptance was guarded by definite restrictions. These facts explain certain portions of the oath which are hardly applicable to present day conditions, the modern teacher, for example, while grateful for recognition of his services, hardly expecting such extreme devotion as is demanded by the oath. Nor is the attitude with regard to lithotomy entirely in accordance with modern practice, for while one does hear at times suggestions from the specialists, that the general practitioners and surgeons infringe upon their assumed prerogatives, I am not aware that the righteousness of their pretensions has been admitted.

In other particulars the ideals set forth in the Hippocratic oath are well worthy of your emulation. Intelligence, rectitude, honour, discretion; these are the keynotes of the oath, and they are also those to which every medical man must attune his life

if he has at heart his own best interests and those of his profession. These virtues are expected of him, and if he fails in them, the greater is his fall.

Litré, in his prefatory remarks upon the oath, has well said "the profession of medicine is one of the most difficult that may fall to the lot of a man; with its grave responsibility, limited power, obscurity in many cases, fugitive opportunities and the impossibility of retracing one's steps. Certainly one may not trifle with the dangerous serpent of Epidaurus. Add to this the personal dangers of the study and practice, the perpetual contact with suffering and death, the scientific training that strengthens and aggrandizes the soul; the feelings of humanity which dominate in the exercise of an art essentially benevolent, and one will not be astonished that even in remote antiquity this serious profession should have inspired a work of so elevated a character as that known as the Hippocratic Oath."

But while the oath might well serve as the text of an edifying homily, it is not the only Hippocratic writing from which words of admonition to the intending practitioner may be cited. In other treatises we find more detailed statements of the requirements one should seek in a medical man, requirements not only mental and moral, but also physical.

Thus in the treatise *de medico* one finds the following: "It is essential for the physician that his complexion be of good colour and that he have that degree of rotundity which may be naturally suitable to him; for it is thought by the vulgar that those not thus physically equipped are incompetent to care properly for others." The Hippocratic writer was of Caesar's opinion.

"Let me have men about me that are fat;
Sleek-headed men and such as sleep o' nights."

You may not all satisfactorily meet this requirement. The exigencies of student life do not encourage the development of embonpoint. But do not be discouraged, the day will come for many of you, I trust, when your anxiety will be aroused lest you may overdo, rather than fail in this requirement. The next items are, however, more under your control. "Further," it is said, "all things about him must be clean, his raiment appropriate and his perfumes agreeable, having an odour beyond all suspicion." Cleanliness is next to godliness, nay, from the surgical standpoint it is of even greater importance. Nowadays with our greater knowledge of the cause and dissemination of disease, lack of cleanliness is criminal

for a medical man; "all about him must be clean" and the sooner the habit of scrupulous cleanliness be formed, the better it will be for you and for your future patients. Your raiment should be appropriate, neat but not gaudy, and as to your perfumes, the less said about them the better, but be sure in any event that they are "beyond all suspicion."

And our author continues: "His manner must be both elegant and virtuous, manifesting to all both dignity and benevolence. . . . And he should appear thoughtful in demeanour but not austere, since austerity may appear to imply malevolence. On the other hand he who gives way to mirth and unseemly hilarity is regarded as vulgar. He must be strictly on his guard against this." And in another treatise, that *de habitu decenti*, the author adds the following admonitions: "It is necessary that the physician should possess a certain amount of urbanity, since austerity repels both the sick and the well. . . . He should not converse more than is necessary with those unskilled in the art. For if he does it will be regarded as a challenge of his treatment. And he must above all things avoid officiousness and ostentation."

What a paragon of perfection would be the man who could comply with all these requirements demanded by our medical ancestors twenty-three hundred years ago. And yet who can deny the appositeness of each and every demand. Medical practice is not alone a matter of diagnosis and treatment; it brings the practitioner into such intimate relations to his fellow-man that it demands the exercise of all the social virtues. The author of the *de habitu decenti* has well said that "there is little difference between medicine and philosophy. For all those qualities demanded by the one are required by the other, freedom from avarice, reverence, modesty, moderation, reputation, good judgement, tranquility, affability, cleanliness, intelligence, recognition of what is useful and necessary in life, the avoidance of impurity, freedom from superstition and a divine preëminence," and then, all this he sums up in one pregnant sentence, "The philosophic physician is the equal of the gods." That was the measure of the esteem in which the physicians of old held their profession, and shall we, favoured with all the vaunted progress of our day, permit any diminution of that esteem. But note, if you please, that it is to the "philosophic physician" that the highest encomium is awarded, for that is the type of a physician that a university school aims to produce.

But, splendid though it be and full of interest to us moderns, I may not linger over the wisdom of ancient Greece, since I wish also

to present to you some thoughts borrowed from another ancient civilization, that of India. Unfortunately I cannot give even an approximate date for the origin or formulation of the ideas I am about to quote, since in the case of Indian medicine none of the original texts seem to have survived the corroding tooth of time, and we must content ourselves with the writings of later authors by whom in all probability the teachings of their predecessors are more or less fully preserved. It seems, indeed, that none of the Hindoo medical writers, whose works we now possess, antedate the Christian era, but there is internal evidence in their writings that their sources go much farther back. Thus, for instance, it has been pointed out that in the Ayur-veda of Susruta only the worship of Brahma and Indra is mentioned and yet it is known that Buddhism was introduced about B.C. 600 and reached its height at the time of King Açoka, about B.C. 250. This evidence is, however, inconclusive, since it is possible that the writer was a member of the Vaidya caste, the Brahminical medical caste, nor is the evidence to be derived from the traditional origin of the writings any more definite. According to this the original author of the Ayur-veda was Atreya, one of the sacred sages who was taught by the god Indra and imparted the knowledge so obtained to his pupils, one of whom, Agnivesa, made a compilation of his teachings, and this compilation was later revised by Caraka. Similarly the Ayur-veda of Susruta, but little younger than that of Caraka, is said to have been composed by Brahma even before the creation of man and was given to Dhanvantari, the physician of the gods. He, out of pity for mankind, who had in the meantime appeared on the scene, came down from heaven and as King Divodasa took up his abode at Kasi, or as we now term it Benares, where he taught the principles of medicine to disciples who sought his court, Susruta, one of these, compiling from his lectures the work now known by the name of the compiler. The assignment of a supernatural origin to the Ayur-vedas suggests for them a high antiquity, but with all the evidence at present available the question of their original date remains unanswered.

But not for this reason alone are these writings of interest to the medical historian. We have become accustomed to associate the origin of medicine with Greece and especially with Hippocrates, and when therefore one finds in the Ayur-vedas several ideas long supposed to be Hippocratic, one naturally assumes that the Hindoo principles of medicine have been borrowed from the Greeks. Thus one finds both in the Hippocratic and in the Hindoo writings the

statement of a humoral pathology, disease being due to the relative excess or diminution of one of two, three or four dominant fluids. In some of the Hippocratic writings but two of these humours, mucus and bile, are mentioned, but in others four are recognized, viz., blood, mucus, yellow bile and black bile, medical theory being thus brought into greater harmony with prevailing philosophical doctrines. Three dominant fluids were recognized by the Hindoos, air, mucus and bile, and while there are thus differences in detail, the similarity in the fundamental idea of the two systems is particularly suggestive. Nor are the resemblances limited to this. The well-known Hippocratic description of the livid, pinched, drawn expression of countenance, frequently observed in articulo mortis and generally known as the *facies Hippocratica*, is also found in almost verbal similarity in the *Ayur-veda* of *Susruta*; the Hippocratic doctrine of critical days in connexion with febrile affections finds its counterpart in Hindoo medicine, and lastly, the similarity between the standards set up by Hippocratic and Hindoo writers is most striking.

It is possible, indeed, at first sight, probable, that these similarities may have resulted from the adoption of Greek ideas by the Hindoo writers and the uncertainty as to the date of the latter tends towards such a belief. It is noteworthy, however, that while we find references to Hindoo medicine even in the Hippocratic writings and know further that *Ktesias*, a contemporary of *Hippocrates*, was physician to the Persian court and wrote a description of India, we find in the Hindoo writings no references whatsoever to the Ionians (*Yahvanas*) as they termed the Greeks. In other words, there is evidence that some knowledge of Indian medicine was in possession of the Hippocratic writers, but there is none that points to the converse.

This is a problem of very great significance in the history of medicine, since upon its solution depends the correct determination of the original sources of scientific medicine. It is a problem, however, which need not be further discussed on this occasion, my excursion into this debatable territory being altogether for the purpose of indicating a possibly high antiquity for the standards set up by the Hindoo physician, *Caraka*, that I wish to quote to you.

The admonitions of *Caraka* are somewhat more detailed than those of the Hippocratic writers, and for comparison with the latter I may first quote what is said as to the requisites for a physician. "With his whole soul he must strive for the healing of his patients,

and even though his own life be in the balance he must avoid all injury to the sick. In his dress and in all outward adornment he must show simplicity; he must be no wine-bibber and must shun evil companions. His speech must be delicate, clear, pleasant, truthful, pertinent and modulated; he must always observe the conventions required by the time and place; he must be diligent in study, ever seeking to arouse, strengthen and improve his knowledge. . . . When, having the right, he enters the dwelling of a patient, he should be well-dressed and enter with bowed head, thoughtful, with a dignified bearing and yet with all possible respect. Having entered, his words, thoughts and senses must be devoted solely to the treatment of the patient and to the consideration of his condition. He must not babble concerning the affairs of the house, nor shall he communicate to the patient information of a threatened early demise if such information may bring detriment to the patient or to any one."

The similarity to the Hippocratic requirements is unmistakable, and Caraka as well as the Hippocratic writers, long ago formulated the main points of medical ethics, leaving little that is essential to be added in modern times. So much, however, for the physician and the ethical requirements he was and is expected to meet. Let us leave what is for you, gentlemen, the future and consider what Caraka has to say concerning the present.

Concerning the scholar he says: "He must be sedate and of honourable lineage. He must have straight eyes, mouth, nose and spine, a thin, red and clean tongue, regular teeth and lips, and he must not snuffle. His character must be strong, unselfish and considerate; he must have good judgement and memory and be specially well endowed. He should come from a family of physicians or at least he should have consorted with physicians. He must be a lover of truth, with perfect limbs and senses unimpaired, modest, simple in his attire, reliable, slow to anger, decent, clean, pious, faithful, unaffected and skilled. He must be anxious to learn and must strive without ceasing for the acquisition of both the theory and art of medicine. He must not be avaricious nor slothful, but benevolent to all, following all the instructions of his teacher and relying upon him. He who shows these characteristics may be named a scholar."

Surely, and he might also be named a saint. That is a standard of matriculation that some of us at least might find difficulty in satisfying. But do not let us be down-hearted. The requirements of such a standard seem almost impossible, and yet there were

undoubtedly students in Caraka's day, and undoubtedly the gates of mercy must have been opened in those days even as we of to-day, who sit in judgement upon you, open them.

But it is not alone for the physician and student that Caraka set up a standard. Some of us may find something of interest in the qualities he demands in the text-book to be used. "The student should select a text-book which he sees used by well-equipped and intelligent men, one rich in its contents, recommended by experts and suited to the comprehension of all classes of students. It must not weary by repetition, but give the facts, explanations and synopses in their proper order, always adhering to the subject. It must be correct and pleasing in style, rich in its terminology and methodical, the ideas being clearly expressed, and correlated facts brought together without confusion of the principal point. It should be easy to understand, and well-supplied with definitions and examples. For such a text-book scatters the darkness like the clear sun and illuminates everything."

And finally, hear what he has to say regarding the teacher. "The scholar," he says, "should look for a teacher whose instruction is public, whose practical skill is proven, who is clever, versatile, upright and blameless, whose hand knows how to rule, who has the necessary ability and all his senses, is familiar with normal conditions and skilled in treatment, full of true knowledge, unaffected, neither unfriendly nor passionate, patient; full of affection to his scholars and possessed of the gift of teaching. A man of such characteristics is a master. As the timely clouds endow the fertile field with fruit, so he quickly endows the good scholar with the characteristics of the physician."

This needs no comment. You will find among your teachers many who will measure up to such a standard. Let them be your guides and examples. But remember that all the virtue that may adorn your teachers cannot suffice to make of you a competent physician unless you too do your share. You are here not so much to be taught as to learn, the passive must give place to the active, and your part must not be that of fledglings who flutter about with mouths agape hoping that some succulent morsels may be thrust therein, but rather that of those who have tried their wings and seek and choose their own pabulum. That, I take it, is the difference, and it is an important one, between school and university training. To the one one goes to be taught, and to the other to learn. You come here to learn the principles and practices, the science and art of medicine, and you will find much to learn and abundant

opportunities for learning. But you will not find medicine an easy task-master and you will be able to utilize your opportunities adequately only by the exercise of the utmost diligence. That is the essential. "See'st thou a man diligent in his business; he shall not stand in the company of mean men." You have great opportunities before you and accordingly your responsibilities are great, responsibilities to your teachers, to the university, to the public and to yourselves.

"To your own selves be true
And it must follow, as the night the day,
Thou can'st not then be false to any man."

But I have fallen into the pit which I had determined to avoid. And yet, after all I am but emphasizing a requirement demanded by those of times remote. Let me add it to the keynotes of the Hippocratic oath, and in closing repeat them, that they may linger in your ears as requirements that will be demanded of you as members of the medical profession and graduates of McGill:

Intelligence, rectitude, honour, discretion and diligence.

THE Dutch steamship *Batavier III*, from Amsterdam, has landed at Havre a flying hospital, organized by private subscription and placed under the command of Dr. Bierens, of Haan, who has already directed organizations of this kind in the South African War of 1899-1901 and the Balkan Wars. The staff comprises, besides Dr. Bierens, 4 physicians, 26 female nurses and 5 male nurses. This Dutch hospital unit, composed of 200 beds and capable of being moved in forty-eight hours, was sent to Paris, where it was received at the Saint Lazare station by representatives of the assistant secretary of the medical service and by Medical Inspector-General Dziejowski, director of the medical service of the military government of Paris.—*Journal of the American Medical Association*.

REMARKS ON THE CHARACTER AND TREATMENT OF WOUNDS IN WAR

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SINCE the introduction of the modern rifle, machine-gun and artillery, the majority of wounds in war are those caused by projectiles of one form or another. The great improvement in these weapons increasing their accuracy and range, accounts for the infrequent occurrence of bayonet, sword and other side arm wounds. Bayonet wounds are occasionally seen in the form of punctured wounds in the muscular part of the body, or lacerated wounds of the left hand, produced by the soldier grasping his opponent's bayonet in a hand-to-hand conflict. The majority of bayonet wounds are abdominal, causing death on the field. Therefore the wounds may be regarded almost all as gun-shot wounds. These wounds present an appearance varying from the small punctured wound of the rifle bullet to severe multiple lacerated wounds produced by shrapnel, which are not unlike those seen in civil practice caused by machine and railroad accidents. The sharp pointed rifle bullet will usually make a small sinus through the soft tissues, if the range is over three hundred yards. Plate No. 1 shows the small wound of entrance, and Plate No. 2 indicates an equally small exit wound, which is covered by adhesive. In this case the bullet came in contact with bone, went through the face and neck, causing very little destruction of tissue, and leaving an aseptic track, as no suppuration occurred in the wound.

Bullet wounds at close range produce an explosive effect, that is, the destruction of tissue is greater and the wound of exit is much larger than the wound of entrance.

Plate No. 3 shows plainly the small wound of entering, and the extensive destruction of the tissues of the neck at the point of exit. This destruction may have been brought about by the bullet turning on its short axis, as in the case of the German bullet the

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centre of gravity is very close to the base of the bullet, so that it readily turns when it encounters irregular resistance.

There is no evidence that dum-dum bullets have been used, but the Germans have the habit of inverting the bullet so that the base enters first, causing the bullet to expand.*

The destructive effect of these inverted bullets is shown in Plate No. 4, where the tissues, including the tendons, were severely torn. The effect of a rifle bullet upon bone varies from a punctured



PLATE NO. 1



PLATE NO. 2

wound to severe destruction involving the whole shaft of long bones. The effect of shrapnel bullets does not differ materially from that of a rifle bullet. Shrapnel casing, hand-grenades and bombs all produce irregular lacerated wounds on the surface of the body. On account of the irregular size and shape of the missiles, they produce severe destruction of the tissues. If a vital part of the body is severely injured by shrapnel the patient usually succumbs on the battlefield.

*Clips of German cartridges have been frequently found with inverted bullets.

Severe head injuries frequently associated with fracture of the skull are produced. Chest wounds associated with empyema are frequently seen. Injury to the different viscera are met with, as in the case of a soldier admitted after the battle of Neuve Chapelle, wounded by shrapnel in the right hip. A long, irregular piece of shrapnel had passed through the great sciatic notch,



PLATE No. 3

ruptured the bladder, but did not penetrate the abdominal cavity. A supra-pubic cystotomy was performed and the shrapnel removed through the tear in the bladder.

The sinus produced by shrapnel in the soft tissues requires special consideration, in order to appreciate the method of treatment followed. The sinus varies in size in proportion to the size,

shape and velocity of the fragment producing it. The sinus tract is very irregular, as muscle fibres cut at different levels, retract unevenly. If the sinus is parallel to the muscular fibres the sheath of the muscle may be torn, causing rupture of the muscle into and obliteration of the sinus tract at different points in its course. This interferes with drainage, has a tendency to produce a closed cavity causing the rapid incubation of bacteria. If bone is encountered by the portion of shrapnel you will invariably get cavities leading in various directions from the main sinus. In many cases portions of clothing, varying in size, are carried in with the shrapnel the full length of the sinus. These particles of clothing are covered with the highly-fertilized germ-laden soil found in France, which accounts for every shrapnel wound being septic.

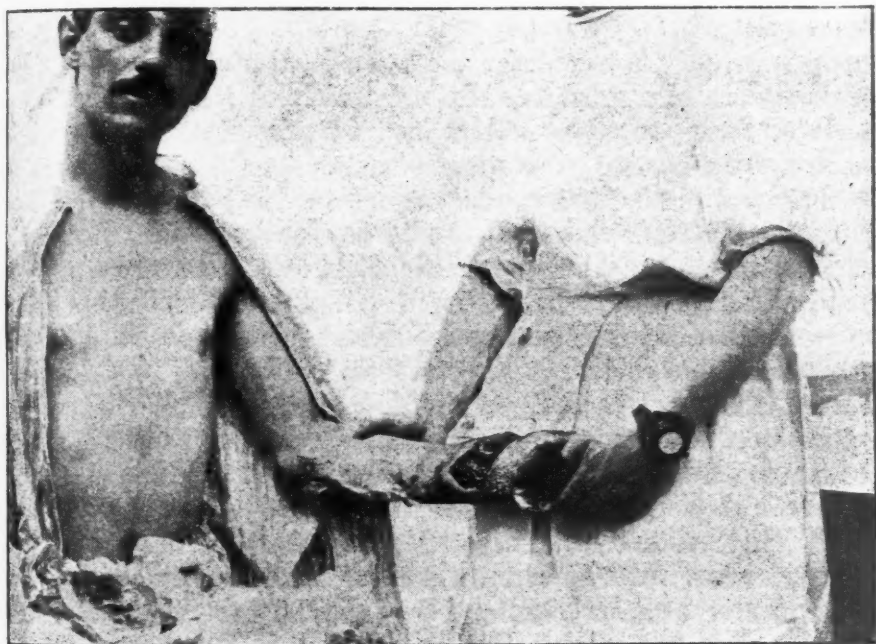


PLATE No. 4

With regard to wound infections, we have found streptococcus most frequently present. Tetanus bacillus has made its appearance in a number of cases, while the bacillus *aerogenes capsulatus* of Welch frequently produces the much-dreaded gas gangrene.

Before discussing briefly the special treatment of these cases of infection caused by the germs mentioned in the previous paragraph, I wish to state a few points of importance with regard to the

surgical manipulation which applies to all wounds. Understanding as we do that germs are distributed along the whole course of the irregular sinus produced by the missile, and that the focus of most virulent infection is usually situated at the bottom of the sinus where the shrapnel and perhaps a piece of clothing are located, the obvious treatment is to promote free drainage. This is done by enlarging the wound of entrance, if necessary, and by making a counter opening over the seat of the missile, removing it and cleansing the sinus, when a drainage tube is placed in position. This tube should be of such a size as will lie loosely in the wound, so as to permit free irrigation between the tube and the tissues forming the walls of the sinus. The use of the probe in thigh cases is to be condemned, as a small metallic instrument readily finds its way between the muscles, carrying infection and trouble along its course. We have found, with the assistance of the x-ray, all that is necessary is to enlarge the wound of entry, so as to permit the entrance of the gloved finger, which is the most effectual way of exploring the sinus and locating the missile, which determines the site of the necessary counter-opening.

Slight superficial wounds are drained with rubber tissue. Gauze packing on no account should be employed.

We are not dealing with the clear-cut wounds capable of chemical disinfection, usually seen in civil practice. The time elapsing from time of injury to admission in hospital and the irregular and inaccessible nature of the surface to be disinfected, renders antiseptics useless or at least limits their use to the disinfection of the skin and slight superficial injuries. In the field ambulances and clearing stations 2 per cent. tincture of iodine is chiefly used.

On a good many cases the much-lauded Cheatles paste was used. This paste is composed of powdered cyanide of zinc and mercury, made into a paste by mixing it with 1 in 20 carbolic acid. We have observed a number of cases upon which it was used and we are of the opinion that it is harmless so far as superficial scalp wounds are concerned. Its use, however, was very unfavourable in the deeper wounds, preventing free drainage by blocking the sinus, as in almost every case foul-smelling pus was prevented from escaping. The introduction of an antiseptic into a cavity sufficiently strong to kill germs causes destruction of the leucocytes, and prevents the phagocytic action of those arriving at the seat of infection after the antiseptic has lost its effect on the remaining bacteria. We have therefore found that the use of a hyper-tonic salt solution composed of $\frac{1}{2}$ per cent. sodium citrate and 5 per cent.

solution of common salt known as Wright's solution, used by the continuous drip method, cleans the cavity, carrying away bacteria, and promotes the continuous flow of lymph to the part containing fresh vigorous leucocytes, capable of destroying any bacteria that may be left behind by the salt solution or faulty drainage. After the infection has cleaned up an aseptic dressing is all that is necessary.

With regard to gas gangrene, the superficial variety is treated by freely incising the part, and the liberal use of hydrogen peroxide and exposure to air. Lactic acid has proved absolutely useless in our hands, but not disappointing, as the bacillus of Welch produces lactic acid and is able to live in that medium. The deep variety of gas gangrene is controlled only by amputation of the affected limb. A circular incision is used, the cut surface is left exposed, no sutures are used, and the exposed surface is treated with hydrogen peroxide and salt solution application.

To appreciate fully the saline treatment which is based upon reason and capable of proof, as is shown by the excellent results obtained, we must have a clear conception of the series of conditions into which tissues enter as a reaction to irritation, known as inflammation, and defined by Professor Adami as the series of changes in a part which constitute the local attempt at repair of injury to a part.

The readers of this article who have had the good fortune of receiving the excellent clinical teaching of the late Professor Cheyne, of Edinburgh, will remember his impressive and useful way of teaching, by the presentation of important points in triangular construction. We would recall two of the more important: the first, warmth, quietness, and asepsis, comprise the essentials in an operating room. The other has regard to the value of antiseptics, but at the present time it has a wider application. His exhortation was: "Put not your faith in kings, princes, or boracic acid."

DELIVERY BY HYSTEROTOMY—FIVE
INSTANCES

BY H. E. KENDALL, M.D.

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AMONG the events marking the progress of the surgical art, the growth of the operation of Cæsarean section is a notable one. To the student of the eighties, its very name was awful and holy, and the procedure was to be thought of by the very bold only, after every other hope had fled. Now all one needs to guard against is infection, and the operation can be lightly selected, if suitable for the case in hand. In short, it is often good practice to cut the uterus and sew it up again instead of waiting unduly or dilating and tearing it when one desires to empty it quickly of its contents.

The first case to be reported is one of the classical Cæsarean section or abdominal hysterotomy. The patient, a young woman, had her first two children through difficult forceps operations. Both were born dead, and her return to health after both confinements was slow. She had a moderately contracted or male pelvis. For her next ordeal, she was offered the Cæsarean section and gladly consented. The three infants following were therefore born by that method, healthy and unblemished, while she herself had the advantage of three rapid and uneventful recoveries.

In each instance the operation was left till the onset of labour. Preparation was begun as soon as she reported pains, the operation being done about two hours afterwards.

By this timing one had the advantage of enough dilation of the cervical canal to obtain good drainage. The uterus was delivered before being incised. In one instance the placental site was cut into, although it was sought to avoid it. Hæmostasis was much more difficult in this case. Some of the sinuses had to be ligated, and a much larger number of sutures were required in closing the incision. The suture material used for the first operation was

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chromic gut. The second delivery was three years after the first and the line of closure showed no scar even. At this second operation, linen was used for the deep sutures. Eighteen months afterwards the third opening was made, and the linen stitches were still quite prominent. For this last chromic gut was again used. The uterus was opened in a different place at each delivery, but always longitudinally. One simply tried to avoid large vessels and the probable placental site.

In general a few points in technique may be brought to memory.

The uterus is generally delivered before being opened. It is, however, by some inclosed "in situ." This latter makes a shorter abdominal scar, but one can see no other advantage.

The control of hemorrhage is very easy in the hands of an assistant if the uterus has been delivered. There is no need for a ligature thrown round the lower segment.

The incision is usually made longitudinally, but a transverse cut across the fundus has been used and recommended.

Just before incising the uterus it is well to give a hypodermic of pituitary and ergot.

In repairing the uterine wound the sutures may be of chromic gut or linen and should go through all coats except the mucous.

They should be interrupted accurately approximated and carefully tied. Over all a layer of fine silk or other suture material should seal up the peritoneal coat.

If the cervix is not already dilated sufficiently to allow of full drainage, this should be obtained by digital force before the incision is closed.

In the books the mortality of the procedure as a whole is put at 10 per cent., but this is misleading. The elective Cæsarean section, decided beforehand and prepared for, is one thing, but done after frequent examinations or attempted delivery and when the patient is possibly infected and certainly exhausted is quite another. The two should not be mixed in statistics or in our minds.

As to the indication in county practice, for we do not very often come across such cases, given a woman who has been treated with reasonable skill and lost her first two children from a moderate disparity between the size of the foetal head and the maternal passage, she is entitled to a choice of two methods for her next.

1. Labour brought on at eight months

2. The elective Cæsarean section.

In the first case she is not sure of a live child, and being born alive it has to meet the dangers of the premature infant. In the

latter she has no reason to fear for the child or herself. The Cæsar-ean section is undoubtedly the most promising.

The second case is as different from the first as can be. It was one of placenta previa at five months. The patient was a multipara and her previous confinements had been uneventful. She had now been bleeding for two months. The last month was spent in bed. As she was exsanguinated, the call for relief was urgent.

In planning for her three considerations pressed:

1. The uterus must be emptied.
2. There must be no blood lost in doing it.

3. Where no previous pains have occurred to soften the cervix the difficulties of obtaining forced delivery at five months are very great. It takes a long time; much force; and usually considerable trauma is inflicted before one gets enough dilation to get a leg down even where there is no placenta blocking the way.

Hysterotomy was the obvious way to meet this emergency and the vaginal route seemed the best. Accordingly an incision was made in the anterior cervico-vaginal junction, and the uterus separated from the bladder as for a vaginal hysterectomy. The uterus was then split up until the placental site was passed and the membranes presented. These were ruptured. A foot was brought down with tissue forceps, and the child easily extracted. Afterwards the placenta was peeled out bi-manually. There was no loss of blood, and the whole procedure including the repair of the uterine wall by chromic gut sutures, took a short half-hour. Recovery was quite smooth and reasonably rapid.

This case leads one to ask whether at full term and placenta previa, the same procedure might not sometimes be called for. Given excessive bleeding, with a rigid cervix, and no labour pains, there is good authority for the method as it promises a better control of hæmorrhage than the more conservative methods. Of course, if labour had come on and there was some dilation so that a leg could be brought down for a tampon, one would naturally adopt that method, or the use of a Champetier de Ribes bag to control bleeding and favour dilation. The dividing line between these methods would be a fine one, to be decided only in the face of the several difficulties of the case in hand.

The third case differs equally from the other two. Here the patient had come to full term and was suffering from eclampsia. When seen she had had convulsions every few minutes for five

hours. Labour had not begun. The cervix was rigid and long. A drachm or two of urine removed per catheter was found highly albuminous. Rapid delivery was decided upon by vaginal hysterotomy. The bladder was separated from the uterus as in the previous case. The uterus was then split up far enough to permit of the comfortable application of forceps to the foetal head. Delivery of a living child was rapid and easy and the whole proceeding not taking more than twenty minutes. Afterward 20 ounces of blood were taken from a vein and replaced by 20 ounces of saline. She had no more convulsions and consciousness was returning in twelve hours.

On the question of the general treatment of eclampsia there is good reason to believe that the "*accouchement forcé*" in any form is an admission of failure in earlier treatment.

If the case is seen near the beginning of symptoms and thorough eliminative measures together with suitable starving are persisted in, one should generally be able to tide the patient through to a spontaneous delivery without reaching the stage of desperation which calls so loudly for a forcible emptying of the uterus. Nevertheless, if this latter must be done, rapidity, a short anæsthesia, and a minimum trauma indicate that the vaginal hysterotomy is eminently suitable.

As a result of the difficulty of obtaining sufficient number of surgeons for active service, the age limit in Great Britain has been extended for home service from fifty to fifty-five years, and for foreign service from forty to forty-five years.

It is announced that the employees of the Massey-Harris Company, Toronto, are prepared to establish and maintain in England a convalescent home for wounded Canadian soldiers. The cost of equipment will amount to about \$25,000, and it is estimated that \$50,000 a year will be required for maintenance.

DYSPNŒA IN CARDIO-RENAL DISEASE

By THOS. F. COTTON

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DURING the summer of 1913 observations on a series of cardio-renal cases showing a dyspnœa peculiar to these patients were made in London by Thomas Lewis, J. H. Ryffel, C. L. Wolf, T. Cotton and Joseph Barcroft. A preliminary communication of the work done was made before the chemico-pathological section of the International Medical Congress by Lewis and Ryffel, and a full account of the results obtained appears in the November issue of *Heart*. In view of the fact that *Heart*, a journal devoted to the study of the circulation, has only a limited number of subscribers in Canada, and because the results obtained are of such importance that the general practitioner as well as the internist should be acquainted with them, I have thought it advisable to give to the readers of the CANADIAN MEDICAL ASSOCIATION JOURNAL a short review of this article; and in addition to report some observations which I have recently made in the wards of the Montreal General Hospital.

It has long been observed that breathlessness may be accompanied by varying degrees of cyanosis and that on the other hand subjects with congenital heart lesions may be deeply cyanosed, and yet show little or no dyspnœa. This comparison of the degree of breathlessness with the degree of cyanosis suggested to these workers that some other cause than that of insufficient aeration of the lungs must be found to explain the dyspnœa present.

Two classes of cases are of particular interest in this respect, in that the breathlessness present is quite out of proportion to the cyanosis; to the one class with the renal factor predominating is applied the term uræmic dyspnœa; to the other with symptoms and signs referable to the heart is given the name cardiac asthma. Between these two groups of patients occur those which must be spoken of as cardio-renal cases, since both organs show functional impairment. The breathlessness of uræmic dyspnœa and of cardiac asthma, and that present in a certain proportion of the cardio-renal cases have features in common. It was with a view of determining

whether some common factor might be found which could explain this dyspnoea that these investigations were undertaken.

These cases may be recognized clinically by certain common features which they present. The breathlessness, usually gradual in its onset, though it may be sudden, occurs in elderly individuals. This dyspnoea is usually accompanied by a slight degree of cyanosis quite insufficient to explain the respiratory distress; it is of varying degree, at one time intense; at another slight; it is increased by exercise, and more often nocturnal, and generally, though not always of the Cheyne-Stokes type. There is a moderate degree of anæmia, considerable emaciation, and torpor, even coma, may be present. The heart is enlarged, the pulse rate is increased, 80-100; there may be signs of some valvular lesion, varying derangements of the heart's mechanism are to be noted, and some degree of nervous stasis is usually to be made out. The heart is dilated, hypertrophied and fatty, coronary disease is always present, and angina pectoris is not uncommon. The arteries are thickened, and there is hypertension.

Polyuria and thirst are common accompaniments and the specific gravity of the urine is low. Albumen and granular casts are present in a large majority of the cases. Retention of urea is present in the moribund cases, chloride retention is absent. The kidneys may be contracted, but oftener are large and show a fine granular surface with arterial degeneration and fibrosis. Retinitis is usually absent, headache is common, vomiting and convulsions and hemiplegia have been noted. A subnormal temperature is fairly constant. The termination is fatal in most of these cases, particularly if symptoms of cardiac failure are prominent.

With a view of explaining the dyspnoea in these cases by a chemical stimulus in the blood acting on the respiratory centre, blood gas analyses were made in each instance. It is now firmly established that acids circulating in the blood act as a stimulus to the respiratory centre. We are thus able to explain the dyspnoea occurring after exertion by an increased production of CO_2 and lactic acid in the body, both acids circulating in the blood and so rendering it less alkaline. The estimation of CO_2 was made in those cases with dyspnoea and little cyanosis, and also for purposes of comparison in cases of simple cardiac dyspnoea, and in those showing no dyspnoea.

The method adopted for the estimation of the acidity of the blood is a most exact one, and depends on the property which hæmoglobin has of absorbing oxygen. The greater the degree of acidity, or

more correctly, the less the alkalinity of the blood, it always being alkaline, the less will be the absorption of oxygen by the hæmoglobin, when exposed to a pressure of that gas. If CO_2 be added to blood in increasing amounts, the blood will become less alkaline, and if exposed to a constant oxygen pressure will absorb a corresponding less quantity of oxygen. That condition in which the blood takes up less oxygen than in the normal state is spoken of as meionexy, and indicates a shifting of the reaction in an acid direction; that condition in which it takes up more oxygen than normally is called pleionexy. In order that the degree of meionexy might be expressed in units, a formula based on the conception that the interaction between hæmoglobin and oxygen is a reversible chemical change, was made use of. The molecules of oxy-hæmoglobin form at a certain velocity from oxygen and reduced hæmoglobin, and again break up at another velocity into oxygen and hæmoglobin; the ratio of these velocities the one to the other is signified by the letter K. The greater the meionexy; i.e., the greater the acidity of the blood, the lower the value of K, and the converse.

Of the cases examined, an increase of CO_2 in the blood was found only in those showing simple cardiac dyspnœa. In those cases of so-called cardiac asthma and uræmic dyspnœa there was a diminution of CO_2 in the blood. There was, however, a change in the reaction of the blood, since the value of K was low in all these cases. Some other chemical substance was present rendering the blood more acid, and at the same time replacing in part the CO_2 . Hence some other cause than an insufficient æration of the blood with a consequent increase of CO_2 had to be found to explain the increased stimulation of the respiratory centre.

The property which hæmoglobin has of taking up oxygen according to the degree of acidity present was again used in estimating quantitatively the non-volatile acids in the blood. The blood from which the CO_2 has been removed, on exposure to a known pressure of oxygen, absorbs oxygen according to the degree of its acidity. If lactic acid be added to blood free from CO_2 (this is obtained by whipping the blood for a few minutes) the percentage of oxygen absorbed will diminish with the increase in the acidity. We are thus enabled to express the degree of acidosis in terms of lactic acid. In a normal individual the percentage saturation of oxygen varies between 70 and 80 per cent. Those cases with dyspnœa and little cyanosis (cardiac and renal asthma) gave percentages varying between 14 per cent. and 69 per cent., while the cases of simple cardiac dyspnœa gave figures 71-86 per cent. One may con-

clude from these low values the presence of a definite acidosis; the nature of the acids producing this acidosis was not determined. There was no excess of lactic acid in the blood, nor did the urine show any increased production of organic acids. It is probable that the acidosis is due to a retention of acids rather than an increased production—a condition similar to that seen among individuals living in high altitudes.

Of the nineteen cases on whom clinical observations and blood and urinary analyses were made, eight showed acidosis and Cheyne-Stokes respiration, three acidosis with breathlessness but not of the Cheyne-Stokes type, four simple cardiac dyspnoea and four were simple controls.

From the above observations and analyses the following conclusions may be drawn: dyspnoea with slight cyanosis seen in elderly patients subjects of cardiac disease is due not to an excess of CO_2 brought about by insufficient æration of the blood, but to an acid intoxication. This dyspnoea is often of the Cheyne-Stokes type and is accompanied by various signs of cardiac failure; hypertension is common, renal impairment is constant, and wasting and a sub-normal temperature are to be noted. There is probably no real difference between cardiac and renal asthma; and the dyspnoea is probably due to renal insufficiency. The dyspnoea in the majority of cases may be attributed to acid intoxication. The pure cardiac dyspnoea is accompanied by an excess of CO_2 which by rendering the blood more acid acts as a stimulus to the respiratory centre.

During the past month there have been under observation in the medical wards of the Montreal General Hospital five cases offering a clinical picture similar to that described above. I have to thank Professors Finley and Lafleur and Doctor W. A. Molson, in whose wards they were, for the privilege of reporting them.

B. S., a Russian woman, aged forty-eight, was admitted complaining of breathlessness and precordial pain. Personal history: Patient came to Canada nine years ago. While in Russia she had a tumor removed from her face in the region of the left parotid gland. On two occasions, six and two years ago, respectively, she was treated in another hospital for breathlessness similar to that now complained of. This breathlessness was present during the day, but more marked at night. She would be suddenly awakened at night with a feeling of suffocation, and sitting up in bed did not seem to relieve her. This dyspnoea was not accompanied by pain, nor was there any œdema. There is no history of rheumatism or any other infection.

Family History: Five children are living and well; three are dead. Her husband is living and well.

Present Illness: For the past two years her breathlessness has gradually increased. The attacks of suffocation at night have been more frequent, and the same symptom is present during the day. This dyspnoea is not relieved by sitting up, nor is it increased lying down. She has lost considerable weight, and her appetite has been poor.

Present condition: A dark haired middle aged woman with a pale sallow complexion. There is no cyanosis; perhaps a slight blueish tinge to the lips. She lies in a semi-recumbent position and is dyspnoeic. The respiratory curve shows a periodic waxing and waning of the excursions; there is no definite period of apnoea. She shows a considerable degree of emaciation, and there is no oedema. The chest is not emphysematous, the lungs are hyper-resonant, expiration is rather harsh and slightly prolonged, and a few moist râles are to be heard in the right axilla. The heart is enlarged, the relative cardiac dullness being the third rib above, 3 cm. to the right and 15 cm. to the left of the mid-sternal line. The heart sounds are irregular, and a systolic murmur is to be heard at the apex. The irregularity is due to fibrillation of the auricles with ventricular extrasystoles (digitalis coupling). The low ventricular rate may be explained by the digitalis. The arteries are thickened and the blood pressure 160. The urine shows a trace of albumen with a few granular casts. The temperature is subnormal varying between 95° and 98°. At different times during her stay in the hospital there has been a complete absence of respiratory distress; and occasionally she has been troubled with a hacking cough, particularly at night. She remained in the hospital for two weeks, on a salt-free diet and restricted fluids and was discharged improved.

CASE 2. A. G., aged forty-two, was admitted October 28th, 1913, complaining of shortness of breath and a bad cough.

Personal history: Born in Roumania, he came to Canada fourteen years ago. In 1903 he was in bed six weeks with rheumatism; in 1910 he was treated in one of the Montreal hospitals for the same condition. He has had typhoid fever, denies any venereal infection, and does not smoke or drink. He is a shop-keeper and has little work to do.

Present illness: Early in June, 1913, he complained of cough and breathlessness. He became dyspnoeic on slight exertion, at night he would be awakened with a feeling of suffocation. He sleeps propped up in bed, has not complained of pain, and has had

no œdema. He has had a poor appetite and has lost a great deal of weight.

Present condition: A pale poorly nourished man, he sits up in bed with signs of great respiratory distress. His lips are a little cyanosed and he is very restless, constantly moving about the bed. Cheyne-Stokes breathing is easily recognized and is confirmed by the respiratory curve. The chest is emphysematous, the breath sounds are vesicular with prolonged expiration, and a few crepitant râles are to be heard in the left axilla. The pulse is regular, the rate increased (86), the volume is fair, the tension is increased (145), and the arteries are palpable. The apical impulse is thrusting, in the sixth space, 14 cm. from the mid line. The heart is enlarged to the right and left, the limits of relative cardiac dullness being the third rib above, 6 cm. to the right of the mid-sternal line and 16 cm. to the left. A harsh blowing systolic murmur of maximum intensity at the apex is heard over the whole of the præcordium, and is transmitted to the axilla and back. The liver is slightly enlarged, and there is some ascites. The urine shows albumen and granular casts; there is no retention of urea (.43 gms. per liter) and the fundi are normal.

A week after admission some œdema of the legs was noted; this gradually increased, and in addition some increase in the size of the liver. Dyspnœa of the Cheyne-Stokes type was present as before, and there was considerable pain over the præcordium. The patient left the hospital in this condition.

CASE 3. E. L. G., aged forty-seven, was admitted November 1st, complaining of shortness of breath, cough, asthma, bloating of the legs and hands.

Personal history: Patient is an American and has been a liveryman the greater part of his life. He had diphtheria and measles in childhood, gonorrhœa twenty-seven years ago, and has been an alcoholic for many years.

Present illness: For the past ten years he has complained of asthma. These so-called attacks of asthma would often occur at night, occasionally in the day. He would be suddenly awakened from sleep gasping for breath. This breathlessness has gradually increased, so much so that since March 13th, 1913, he has been unable to work, and since September 15th he has remained in the house. During the past few months he has complained of palpitation, and since October 1st he has had œdema of the legs.

Present condition: The patient is a large framed man looking the age stated. He has lost considerable weight, has a sallow tint,

and lies in a semi-recumbent position. He is dyspnoeic, but can lie flat for ten minutes without increased discomfort. The respiratory curve shows the Cheyne-Stokes type of breathing, with short apnoeic periods. This type of breathing could easily pass unrecognized unless carefully looked for. The chest is rather barrel-shaped, the percussion note is hyperresonant, and sonorous coarse bubbling râles are heard over both lungs. The patient coughs often during the examination, and the sputum cup contains a little viscid mucoid sputum. The heart is enlarged to the left past the nipple line (16 c.m. from the mid line). There is a thrusting apical impulse, which is felt outside the nipple line and in the fifth and sixth interspaces. A short systolic murmur is heard at the apex, there is gallop rhythm, and the aortic second sound has a booming quality. The pulse rate is increased (118), the tracing shows pulsus alternans with occasional premature ventricular contractions. The arterial wall is thickened, and there is hypertension (155). The liver is enlarged and tender, there is some dullness in the flanks, and considerable œdema of the legs. The urine is of a dark brownish-red color, the sp. gr. is 1025, and a heavy ring of albumen and granular casts are present. The total quantity passed in the twenty-four hours is 1,100 c.c., there is no retention of urea, a diminution of chlorides in the urine. There is no retinitis and the temperature is subnormal.

The patient was put on a salt-free diet and restricted fluids. Under this regime the dyspnoea became less marked, the respiratory curve normal, the œdema and ascites disappeared, and the patient left the hospital improved.

CASE 4. A. D., aged forty-two, was admitted September 15th, 1913, complaining of shortness of breath, precordial pain, hæmoptysis and headache.

Personal history: At seven she had chorea and measles. Has had three criminal abortions, denies any venereal disease, and gives no history of rheumatism.

Present illness: In 1912 she was in bed on two occasions because of shortness of breath and attacks of suffocation. For the past year on the slightest exertion she has been dyspnoeic. Often at night she is awakened with a feeling of suffocation. These attacks have become more frequent. Precordial pain usually is present after exertion, though it may occur at night, when it is associated with breathlessness. She has had no œdema, and no hæmoptysis until a few days before admission.

Present condition: She is sitting up in bed, quite breathless,

pale, slightly cyanosed, and emaciated. This dyspnoea is of the Cheyne-Stokes type. the respiratory curve showing definite apnoeic periods of a duration of 14 to 16 seconds. The chest is not emphysematous, and the breath sounds are normal. The heart is enlarged to the left (15— cm.). There is a loud systolic murmur at the apex, and the pulmonic second sound is accentuated. The pulse tracing shows an occasional ventricular extrasystole, and pulsus alternans. The pulse rate is 108, the arterial walls are thickened and the blood pressure is 150. The urine is diminished in quantity (500 c.c.) with a spg. of 1026, and has albumen and granular casts. There is some retention of urea, .66 gms. per liter, and there is no retinitis. The red blood cells are diminished in number—4,160,000; there is an increase in white cells—12,800, and the hæmoglobin is 60 per cent. The Cheyne-Stokes breathing continued throughout her illness, the temperature remained subnormal, thrombosis of the right subclavian vein, œdema of the lower extremities, and other signs of stasis resulting from cardiac failure developed before death (November 15th). The post mortem findings were: myocarditis, mitral endocarditis (acute); chronic nephritis, right pleuritis with effusion, ascites and thrombosis of the right subclavian vein.

CASE 5. H. McM., aged sixty-two, was admitted October 27th, 1913, complaining of a hacking cough, breathlessness, palpitation of the heart, and weakness.

Personal history: He is a Canadian by birth, and for the greater part of his life has worked in Montreal as a malter. He gives a history of measles and scarlet fever in childhood, and typhoid fever at twenty-two. As a child he was troubled with palpitation, this being particularly noticeable in the morning. At this time he was not allowed to run or do any heavy work. At the age of twenty-one he had a great deal of heavy lifting to do, and often was obliged to rest because of breathlessness. There is no history of rheumatism or any venereal disease. He drinks in moderation, and is not an excessive smoker.

Present illness: In the past few years he has had more or less dyspnoea on exertion; this has gradually increased. Early in September he seemed to be more breathless than usual, and was often dyspnoeic at night, waking up suddenly, gasping for breath. This respiratory distress continued to increase, and was accompanied by precordial pain. He has had little or no cough, and never has there been any œdema.

Present condition: The patient lies in a semi-recumbent

position. He is pale with a bluish tinge to the lips, and is considerably emaciated. He is dyspnoëic, at times gasping for breath. Definite periods of hyperpnœa and apnœa may be distinguished. The respiratory curve shows regularly recurring periods of hyperpnœa and apnœa; the former with a duration of 27 seconds, the latter somewhat longer, 30 to 36 seconds; The chest is emphysematous, there is a hyperresonant note throughout, and crepitations are heard at both bases. The heart is enlarged to the right and left; relative cardiac dullness is at the second rib above, 7 cm. to the right and 17 cm. to the left of the mid-sternal line. The heart sounds are distant, the rhythm is grossly irregular, and there are no murmurs to be heard. The polygraphic tracing shows a grossly irregular heart action with a ventricular form of venous pulse—auricular fibrillation. The pulse rate is 95-100, the blood pressure 165 and the arteries are thickened. The urine is diminished in quantity (825 c.c. per 24 hours) has a specific gravity of 1020 and has a small amount of albumen and granular casts. 0.6 mg. of phenol-sulphophthalein were injected into the right lumbar muscles, and at the end of two hours 48 per cent. was excreted (normal 60-70 per cent.). There is considerable retention of urea, 1.53 gms. per liter, but no retinitis. The liver is palpable .3 fingers breadth below the costal margin; there is some abdominal distension but no ascites. The temperature is subnormal, the Wassermann reaction negative.

Since admission the patient has gradually grown worse. The Cheyne-Stokes breathing persists, the heart's action weaker, the urea in the blood has increased to 1.77 gms., and he lies in bed in a comatose condition, at times quite excited and irrational.

THE appeal made by Sister Beatrice Bartlett, of the French Military Service de Santé, has resulted in the formation of the French Military Hospitals' Society. Money and supplies will be collected by the society to assist the work of the French hospitals, and will be forwarded to Miss Bartlett.

ACUTE ŒDEMA OF THE LUNGS

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IT is a somewhat singular fact that while acute œdema of the lungs is one of the commonest pathological conditions found *post mortem*, as a clinical manifestation it is by no means so frequent. The affection is found most often in connexion with Bright's disease, pneumonia, and obstructive cardiac lesions, yet after a somewhat extensive experience with these diseases, I can recall but some ten or a dozen cases in which acute pulmonary œdema became obtrusive as a physical sign. The great disproportion between the numbers of cases occurring *post mortem* and *ante mortem* is explained by the fact that in the former acute œdema is a manifestation of the death agony, a result, therefore, rather than a cause. Yet, while uncommon, the condition is of such grave import, and so often directly imperils life, that attention may very usefully be directed to it.

As a pathological entity, pulmonary œdema may be defined as a condition of the lung in which the vessels are congested and there is an effusion of serous fluid into the air spaces. The relationship to pulmonary congestion is close, and, indeed, clinically, such cases when unattended by any notable amount of expectoration, are usually termed pulmonary "congestion." To the clinician pulmonary œdema is only pulmonary œdema when there is ocular demonstration of it. This, it is almost needless to say, is a somewhat artificial distinction. Indeed, cases of œdema occur when from lack of expectoration the patient is actually drowned in his own fluid. As a matter of fact, congestion and œdema frequently go hand in hand, for both may be due to the same etiological factors. We see this for example in the cases associated with obstructive cardiac disease. Here, congestion of the lung is an inevitable result, though it may not for a long time bring about any notable

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disability. However, the tendency of cardiac patients to "catch cold" and suffer from bronchitis is an expression of this congestion, and the time comes, when loss of compensation sets in, that congestion passes over into transudation. Similarly, in inflammations, the preliminary congestion is quickly followed by exudation of plasma. When the congestion, of whatever nature, has passed into the stage that the lung cannot take care of it, the physiological has passed into the pathological, œdema has occurred, and it would be conducive to precision of thought as well as expression if we recognized this and spoke of "œdema" rather than "congestion," prefixing the terms "inflammatory" or "congestive," or others, as occasion requires.

Acute pulmonary œdema may be conveniently discussed under two main heads, *symptomatic* and *idiopathic* cases. The symptomatic forms are relatively much the commoner, though, with the exception of the slighter cases, still somewhat rare. They are met with particularly in connexion with Bright's disease, pneumonia, cardiac failure, arteriosclerosis, aortitis and periaortitis, pulmonary embolism, the acute septic fevers, hyperpyrexia, after thoracentesis, and after anæsthesia. The idiopathic forms, called such for want of a better name, come on suddenly, without warning, and without obvious cause, and at autopsy no sufficient lesion is discovered to account for them.

From the standpoint of etiology we may divide cases of acute pulmonary œdema into five main groups, more or less well-defined one from another:

1. *Agonal*: This is undoubtedly the most common form, being found at practically every autopsy. It is the expression of a number of factors; general weakness, a failing heart, the recumbent position, sometimes inflammation, sometimes toxæmia. It is not the cause of death, but, as Cohnheim expressed it, it comes on because the patient is dying.

2. *Inflammatory*: This is often termed "collateral" œdema. It is usually local, and may be found in the neighbourhood of pneumonic and tuberculous patches, tumours, and infarcts. It is an early phase of all inflammatory processes in the lung.

3. *Congestive*: The typical example is met with in obstructive valvular affections of the heart, and wherever there is inadequacy of the cardiac muscle. The cases associated with hyperpyrexia, sun-stroke, and the acute fevers may with some reason be classified here. Respiratory failure, by lessening the propelling action of the thoracic movements may in some cases be a factor. We see this

sometimes in connexion with cerebral lesions. Local pressure on a branch of the pulmonary vein, as from an aneurysm or mediastinal growth, may also bring it about. Here, too, should be included the œdema of the lung with albuminous expectoration that sometimes occurs after thoracentesis.

4. *Toxic*: We meet this form notably in Bright's disease, though here it is difficult to exclude altogether the inflammatory element. Possibly, the postanæsthetic cases, as, also, those occurring in cachectic conditions and in the course of severe anæmias, ought to be included in this group.

5. *Idiopathic* Here the condition comes on in a fulminating way and is so acute as directly and immediately to threaten life. Its etiology is largely a matter of guesswork.

Clinically regarded, several varieties may be recognized. The mildest type is that met with occasionally in typhoid and other prolonged fevers, and in early cardiac failure. A few fine crepitant râles make their appearance at the bases of the lungs, but no symptoms result. The sign should constantly be looked for wherever there is a likelihood of loss of cardiac compensation developing, for it is of great importance, not so much intrinsically, as for what it indicates.

In another group of cases the condition is a little more exaggerated: the râles are more numerous, more coarse and bubbling, possibly also sibilant, and associated with slight irritable cough and expectoration. It is often difficult to distinguish this variety from bronchitis.

In still another class the signs are more extreme: the râles are more numerous, ronchial fremitus is present, cough is more frequent, a frothy pinkish fluid exudes from the mouth and nose. Dyspnœa is more urgent and cyanosis is marked.

The most severe of all is the acute fulminating form, also called, acute suffocative œdema, acute paroxysmal œdema. It comes on with great suddenness, often without warning, and in a short time the patient's life is brought into jeopardy. The physical signs are all aggravated. Large amounts of bloodstained fluid pour from the mouth and nose. Dyspnœa is extreme. Cyanosis, often with pallor, is notable. The pulse is small, rapid, and irregular. The attack often ends fatally, but may pass off as suddenly as it arose. Where recovery takes place, other seizures may occur later. Such fulminating cases usually depend on nephritis, cardiac failure, aortitis, arteriosclerosis, or, most rarely, on no obvious cause.

It is not my intention to deal with all these forms, but I wish to draw your attention more especially to the last two groups. And to do so the more efficiently, I will cite a few cases that came under my personal observation while in Montreal.

Case 1. J. H., male, aged fifty-five. Alcoholic and syphilitic: the subject of chronic Bright's disease. This patient, when I first saw him, was pasty looking and anæmic; had general anasarca, an enlarged heart, and high blood pressure. The urine was scanty, high coloured, and contained much albumin and many casts. Under suitable treatment the anasarca subsided, the urine increased and the albumin diminished. Then, without warning, the patient became maniacal and after some hours passed into coma. Hydrothorax developed on one side. Numerous moist bubbling and sibilant râles appeared all over the chest. Ronchial fremitus was marked with mucous rattling in the throat. A frothy fluid exuded from the mouth. Cyanosis became marked. The pulse became more rapid, weaker, and irregular, and the patient finally died.

Here we had to deal with a uræmic condition associated with marked œdema of the lungs. The case comes in the third clinical group detailed above. Pulmonary œdema of this grade, supervening without prodromal symptoms, in nephritis is, in my experience, not so frequent as the forms of lesser intensity which are common enough. Occasionally, the œdema affects mainly the bronchi—the "albuminuric bronchitis" of Lasèque. The most usual event is for the œdema to involve the bases of the lungs, precisely as in cases of cardiac failure, and it is part and parcel of a general anasarca condition. Or, with the physical signs of œdema of the bases, which may persist for months, the patient may be the subject of so-called "asthmatic" attacks. In such cases, it has happened that the primary nephritis has been overlooked and the affection treated on erroneous lines. Rarely, nephritic patients are the subjects of the hyperacute or fulminating form of œdema, which comes on without warning and is so intense that it entirely dominates the situation.

Case 2. C. M., female, aged fourteen years. Previous history good: no rheumatism. A well developed and well nourished girl. The patient, who was a domestic, had been sent on an errand and had run part of the way. Immediately on returning she had been seized with cough, urgent dyspnoea, and became very ill. A doctor was summoned who ordered her to the Western Hospital. I saw her shortly after her arrival and about two hours from the

beginning of the illness. She was semicomatose, but could be roused sufficiently to answer questions. Her face was pale and cyanotic: the limbs cold. A clammy sweat was present on the face. Dyspnoea was extreme and a small amount of pinkish froth was escaping from her mouth. The respirations were somewhat noisy: the pulse was rapid, small, and irregular. There was no oedema of the face, limbs, or trunk. Examination of the chest showed a considerable degree of enlargement of the heart to the left, with a loud systolic murmur replacing the first sound and transmitted into the axilla. The chest was full of loud sibilant sounds and rhonchi, with many bubbling râles. An examination of the urine excluded Bright's disease.

As the case was urgent, free venesection was performed, oxygen inhalations given, and strychnin and atropin were given hypodermically. Improvement gradually came about, the urgency of the symptoms slowly passed off, but it was nearly a week before the signs of pulmonary oedema disappeared. The area of cardiac dullness lessened somewhat but the murmur persisted. After three weeks she was discharged as recovered.

Here, the diagnosis was acute fulminating oedema of the lungs, secondary to mitral insufficiency. I may remark that in regard to pulmonary oedema occurring in cardiac cases we have an exact parallel with what occurs in Bright's disease. Slight oedema involving the bases of the lungs is common, and constitutes the first intimation of a failing circulation. Less often, we meet with a generalized oedema of the lungs, which may persist for weeks and is singularly resistant to treatment. One such case I have met with in association with mitral stenosis. Rarely, we meet with the acute fulminating type, as described in my second case. It comes on with great suddenness and is the first evidence of anything being wrong. This form may or may not be associated with general anasarca.

My next case is, so far as my information goes, absolutely unique, being one of acute fulminating pulmonary oedema occurring in a person apparently in good health, in whom no lesion could be found at autopsy to account for the condition.

Case 3. Mrs. P., forty-five years of age. Considered to be in perfect health. She was suddenly seized one night on retiring with an attack of suffocation. She asked her husband to get her a glass of water. When he returned she was black in the face, breathing with difficulty, and frothy blood tinged fluid was pouring from her mouth and nose. Between one and two pints of this material was

eliminated during the attack. Death occurred from asphyxia within an hour of the time she was first seized. No cause could be assigned for the trouble, unless possibly it could be attributed to over-exertion, she having whitewashed a kitchen ceiling that evening. It was stated that about two years previous she had had a similar seizure which lasted only a minute or two, but was so severe that she was thought to be dying. This case occurred in the practice of a former colleague in Montreal, Dr. W. H. Smyth, to whom I am indebted for the history. The autopsy, which I performed myself ten hours after death, I give in some detail, in view of the importance of the case.

The body was that of a plump, well nourished woman. It was still warm and post mortem rigidity was complete. Varicose veins were present on the lower limbs, which were also slightly oedematous. Lividity was slight on dependent portions of the body. A somewhat brownish frothy fluid was exuding from the mouth and nose, the amount of which was increased on pressure upon the thorax. The abdomen was distended.

Heart: The apex was in the fifth interspace in the nipple line. The left ventricle was contracted firmly: the right ventricle was somewhat dilated. The right ventricle contained some fluid blood, which spurted out, apparently under pressure, on making a slit in the pulmonary artery. The left ventricle was empty and its cavity small. The tricuspid orifice admitted the tips of four fingers: the mitral orifice admitted one. The muscle of the left ventricle was thick and firm, showing no fibrosis. The foramen ovale was closed. The coronary arteries showed a trifling amount of sclerosis and were quite permeable. There was no pulmonary embolism.

Pericardium: Normal.

Aorta: Showed a very slight fatty change in the intima about the sinus of Valsalva.

Right Lung: The organ was adherent universally by old veil-like adhesions. It was heavy and pitted on pressure. Frothy blood stained fluid could be expressed readily in quantities from the bronchi. On section, the lung was generally congested and oedematous, the fluid, which was thin, watery, and blood stained, in all respects similar to that eliminated during life, running out freely.

Left lung: The left pleural cavity contained about two ounces of clear watery fluid. The lung was attached to the chest wall by one small fibrous tag anteriorly. The organ was in all respects similar to the right. Neither lung was friable.

Bronchi: Were filled with frothy fluid.

Pulmonary artery: Free from clot.

Peribronchial glands: Slightly enlarged and pigmented: no tuberculosis.

Trachea: Normal.

Larynx: Normal: no œdema of the glottis.

Spleen: Normal.

Œsophagus: Normal.

Stomach: Capacious, greatly distended with gas, containing about a pint of chyme.

Intestines: The jejunum and the upper three feet of the ileum were œdematous, but otherwise normal. The appendix was short and atrophied, lying on the brim of the true pelvis, coiled up behind the cœcum.

Pancreas: Normal.

Liver: Normal.

Right kidney: Of normal size: the capsule was very slightly adherent in places; a little congested in appearance. On section the organ cut as normally.

Left kidney: Normal, except for slight congestion.

Suprarenals: Normal.

Ureters: Normal.

Uterus: Parous in type. A few patches of congestion were found about the fundus.

Right ovary: Small, scarred, slightly prolapsed and adherent by old velamentous adhesions.

Left ovary: Small and scarred, enveloped in firm delicate adhesions.

Fallopian tubes: Both tubes were dilated in their outer halves and filled with clear fluid.

Microscopic examination was made of the lungs, heart muscle and kidneys. No abnormality was detected except in the former. The lungs showed congestion of the alveolar capillaries; a small amount of granular matter and a few erythrocytes with some desquamated endothelial cells were found in the alveolar spaces.

Anatomical diagnosis: *Acute fulminating œdema of the lungs: slight hyperœmia of lungs: partial œdema of small intestines: slight coronary sclerosis: bilateral hydrosalpinx (slight): bilateral healed perioöphoritis: bilateral old pleural adhesions.*

The autopsy in this case established the fact that a fatal œdema of the lungs can exist in the absence of any determinable pathological conditions to account for it. The usual causes, Bright's

disease, cardiac failure, aortitis, and arteriosclerosis, were not found. The thymus gland was normally involuted and there was no evidence of any local pressure upon the heart or pulmonary vessels.

A good deal of attention has, in the course of the last few years, been paid to acute fulminating pulmonary oedema, particularly in English and American literature. This is, no doubt, due to the extraordinary character of the affection, its rarity, and the fact that it is so dangerous to life. The mechanism of its production is very puzzling. As we have already pointed out the condition may occur in connexion with certain grave disturbances, notably of the kidneys, heart, or bloodvessels, but also idiopathically in persons considered to be in good health. The characteristic features are the unexpected and acute onset, the absence of prodromata, the rapid development of signs of asphyxiation, the grave menace to life, and the tendency to recur, when recovery has taken place.

The amount of fluid expectorated or eliminated is sometimes extraordinary, as in my third case. A patient of Lissaman's also evacuated 1260 c.cm. within eight hours on one occasion, and had no less than seventy-two attacks in the space of two years and a half.

The attacks have a curious tendency to come on at night, and may last only a few minutes, but usually some hours, occasionally days. Death may ensue within an hour. The patients usually have a sense of impending dissolution.

The diagnosis of acute oedema of the lungs is usually easy. Perhaps the greatest difficulty is met with in the inflammatory cases. Here, the physical signs are those of bronchitis, bronchopneumonia, or acute suffocative catarrh. A discussion of the differences between these affections would be largely academic, for, practically, the treatment is the same. The presence of an inflammatory lesion such as bronchitis, pneumonia, or tuberculosis, with elevation of the temperature would point to the inflammatory type of oedema. In the absence of an inflammatory process we may diagnose simple oedema, if we find, in a nephritic or cardiac case, fine crepitations, or coarser moist râles at the bases of the lungs. If the bronchi in these areas be obstructed from exudation we get collapse of the lung, with resultant feeble or absent breath sounds and impairment of the percussion note. Cases may then be mistaken for pleural effusion. Care must be taken not to mistake the recurrent or paroxysmal type of oedema for asthma. The

term "cardiac asthma," it may be remarked, is objectionable as it leads to confusion.

In the fulminant cases, the rapid onset, the signs of asphyxiation, the outpouring of pinkish frothy fluid from the mouth, and bubbling and sibilant râles are distinctive.

The prognosis varies according to the case. The slight forms, such as occur at the beginning of a cardiac breakdown, are unimportant in themselves, yet significant as fingerposts of danger. Timely recognition will often restore function to the heart and postpone the evil day. Inflammatory cedema in the case of pneumonia, affecting the same lung, is of grave significance: affecting the other lung it is prognostic of death. The outlook in the fulminating form is always serious, not only as regards the immediate attack, but for the future. Persons so affected are always in jeopardy.

Perhaps a word or two may not be out of place in connexion with the pathogenesis of this very curious and interesting condition. We can best understand the process if we recall the different factors that have been proved to be at work in similar conditions elsewhere. Three things, in particular, are of importance: the blood pressure, the capillary walls, and the character of the blood.

A sudden temporary increase of blood pressure probably does not bring about cedema. We know, however, that when the vascular tension is constantly increased, as, for example, where there is obstruction to the outflow of blood from a part, the plasma tends to escape from its normal channels. In the case of the lung, mere increase in blood pressure alone is not likely to bring about cedema by itself. We can hardly explain the sudden onset of the trouble in some cases on this basis. More likely we should invoke as well the influence of the lymphatic drainage system. Ordinarily the lung can take care of a moderate degree of plasma effusion. But, should the lymphatics be inadequate to carry off the overplus from any cause, cedema must needs result. Under the congestive form we must include the cases with albuminous expectoration that sometimes occur after paracentesis thoracis. Here the mechanism is somewhat complicated. A compressed lung is a congested lung. Its parenchyma is more or less inflamed. The vessel walls are damaged and to some extent paretic. You relieve the pressure suddenly, and a greater congestion still is the result, a great overplus of blood rushing into vessels that are but poorly prepared to receive it—the so-called congestion "by recoil." Here, too, we may place the cases occurring in hyperpyrexia and sunstroke, the

high temperature bringing about cardiac failure through degeneration of the muscle. But another element possibly comes in. Owing to the imperfect aeration of the blood that occurs in congestion, the nutrition of the cells forming the capillary endothelium suffers, degeneration sets in, and the vessel wall becomes more permeable. Degeneration, moreover, would be more likely to occur in the inflammatory and toxic cases.

Another factor of importance is the nervous system. Vasomotor influences unquestionably play a part in inflammatory congestion, and it may be in other forms. It has been suggested that in pulmonary oedema we have a loss of vascular tone which leads to a paretic condition of the vessel walls, with resultant congestion and transudation. It is not impossible, nor even improbable, that just as we can have a pure vasomotor oedema of the skin and subcutaneous tissues, or of the larynx, there may be an analogous condition of the lungs—in short an angioneurosis. This might be compared to the acute abdominal tympany we sometimes find in neurotic women. It will be remembered that, in my third case, the abdomen was distended and a moderate oedema of the upper part of the small bowel was present. In the absence of a cardiac or nephritic lesion, it is difficult to explain the oedema of two such widely diverse organs as the lung and small intestine in any other than as a nervous phenomenon. I would suggest, therefore, that in the idiopathic cases we are really dealing with a form of angioneurotic oedema, though in doing so I am aware that I am going counter to the trend of opinion among physiologists on this point.

Alterations in the quality of the blood, which lessen its viscosity, or bring about degenerative processes in the vessel walls, conduce to oedema and even hæmorrhage. For example, we meet with oedema of the legs in chlorosis, pernicious anæmia, and various toxæmias.

Thus, we can readily understand that in any given case of pulmonary oedema a number of contributing factors may be at work. For example, in the form that sometimes follows ether anæsthesia, we probably have to do with an irritative congestion of the pulmonary capillaries, an increased permeability of the vascular endothelium of a degenerative and toxic nature, and an increased heart's action.

Welch's paper on the experimental induction of pulmonary oedema, published as long ago as 1878, is still a locus classicus on this subject and is frequently referred to. This observer did not think that enfeebled action of the whole heart, or passive hyperæmia from obstruction, was competent to explain the condition. He

found he could produce pulmonary œdema by ligating the aorta and its branches, as, also, the pulmonary veins. The degree of obstruction required to produce this effect, however, could hardly ever occur in the human subject. Welch, further, was able to confirm the view of Cohnheim and Lichtheim that very great increase in the blood pressure in the aorta may occur with relatively little effect upon the intrapulmonary pressure. Moreover, the right ventricle is capable of overcoming enormous obstacles in the pulmonary circulation without material lowering of the aortic pressure. His final conclusion was that the essential feature was to be sought in "a disproportion between the working power of the left ventricle and of the right ventricle, of such a character that, the resistance remaining the same, the left heart is unable to expel in a unit of time the same quantity of blood as the right heart."

This disproportionate action of the two sides of the heart, with predominance of the right, may, of course, be brought about in different ways. Thus, Grossman found in cases of pulmonary œdema due to muscarine poisoning a condition of spasm, and not paralysis or paresis, of the left ventricle. Von Strümpell's idea was that there was a sudden failure of the left ventricle. Such may be the case where there has been a toxic action of any kind on the cardiac muscle. This is, as is well-known, more apt to involve the left side than the right. Welch's theory, while undoubtedly explaining some cases, cannot cover all. Disturbances of innervation, changes in the capillary endothelium, and qualitative changes in the blood can by no means be ignored.

As we have seen, the diagnosis of acute pulmonary œdema is usually easy. The treatment, however, is by no means so simple. One might infer from the multiplicity of remedies that have been advocated that none, perhaps, are of much avail. Rather, to my mind, does this indicate a realization of the varying etiology of the condition. Here, as elsewhere, a thorough grasp of the factors at work is essential to an efficient therapeutics.

The treatment of the milder forms complicating acute and chronic infections or intoxications, nephritis, cardiac disease, and arteriosclerosis, resolves itself largely into the treatment of the underlying condition. In many of these affections pulmonary œdema is a terminal event, and it may as well be admitted at the outset that the prognosis is grave and treatment is often ineffectual. Particularly is this the case with the pulmonary œdema met with in chronic nephritis. Here the condition is but one of the manifestations of uræmia and proves singularly refractory. The attacks

occurring in connexion with cardiac failure are but little better, for if recovered from they are apt to return speedily. In cases, however, of sudden loss of compensation, as, for example, in acute dilatation of the heart occurring in one who has previously had few or no symptoms, judicious treatment may save the situation. In cases associated with arteriosclerosis the problem becomes very complicated, for we frequently have to deal with the effects of high blood pressure, cardiac insufficiency, and renal involvement. Here, what appears to be the most threatening feature must be combatted first. In the rare event of acute pulmonary oedema supervening in cases of hyperpyrexia one would naturally turn to cold packs or baths as a reasonable procedure. Having said so much, in a general way, to indicate some of the difficulties with which we are confronted, we may now profitably consider the treatment of the attack itself.

An attack of acute pulmonary oedema is an alarming affair. If conscious the patient is greatly distressed, and both looks and feels as if death were impending. If unconscious the danger is still more imminent. Treatment, to be of any avail, must be prompt and energetic, yet always guided by a rational appreciation of the conditions present. Timely and judicious interference will often save life. Tardy or inappropriate remedies may throw it away. The obstrusive feature of the condition is asphyxia, and this is due in part to the flooding of the air passages with fluid, and in part to the associated cardiac failure. It is practically impossible to attack the oedema directly, but we should relieve suffering and support the heart. How we ought to do this will depend upon the case. If the patient be in full possession of his senses, but agitated or fearful, and clearly suffering in both mind and body, small doses of morphine should be tried. Theoretically, morphine is contraindicated in acute oedema of the lungs, as in acute catarrh, as stifling cough and locking up secretion, thereby throwing more work upon a possibly already labouring heart. Yet good authorities like Riesman, Stengel, and Hewlett, bear witness to its usefulness, particularly in recurrent cases. It probably acts by alleviating the shock and mental disturbance incident to the attack, and by quieting and steadying the heart. The relief of the feeling of suffocation enables the patient to breathe more freely, moderates excessive action of the diaphragm, diminishing the amount of blood reaching the lungs, and lessening the consumption of oxygen by the respiratory muscles. In my opinion, however, it should be used with great circumspection and in the

smallest dose that will produce the desired effect. In the severer cases, where large quantities of fluid are pouring from the mouth and nose, where the pulse is small and irregular, and the patient is with difficulty to be aroused, morphine should not be used. Atropin is not so powerful as morphin but, according to Stengel, may be advantageously combined with it, in doses of one two-hundred and fiftieth of a grain. As this drug depresses the vagus it should only be used in cases where the heart's action is strong, or where it is guarded by the exhibition of some cardiac stimulant. I have thought some benefit was derived from full physiological doses of atropin in cases of œdema occurring in uræmia. But this effect is usually but temporary. In cases of pulmonary œdema due to pilocarpin and to muscarin poisoning, atropin is the physiological antidote and should be pushed. Chloroform, advocated by Lissaman, has a somewhat similar action to morphine. It has been used with great success by some English physicians in the recurrent form of acute paroxysmal œdema.

Lowering of the head, so as to facilitate the removal of the fluid from the lungs has been found beneficial in cases due to pilocarpin and anæsthesia. This could not likely be put into practice in those cases due to heart weakness.

When cyanosis becomes evident oxygen inhalations will prove of great assistance. They relieve the air hunger and strengthen the heart's action. The gas should be used freely. In this way we gain time and allow other measures to bring about their effects.

High arterial tension is not uncommonly met with in those suffering from œdema of the lungs. In such cases the use of vasodilators, amyl nitrite and nitroglycerin, and similar drugs, has been advocated. It is, to my mind, questionable if anything is to be gained in this way. If one be a follower of James Mackenzie, one would, doubtless, take the view that a high blood pressure, when present, is a necessity, necessary; that is, to maintain an efficient circulation. If it be possible to materially lower the pressure, and of this there is some doubt, we may be doing harm in so doing. Possibly an exception to this position may be found in those cases of high blood pressure of toxic origin, which come on acutely. Even here, the tension may be reduced in a better way than by vasodilator drugs.

In my judgement the most efficacious remedy we have to combat acute pulmonary œdema is bleeding. Where the heart is dilated, and contracting rapidly and irregularly, and therefore inefficiently, this procedure is particularly indicated. If uræmia

or other intoxication be present it is useful to remove the deleterious products. If the blood pressure be high we can remove with safety eight or ten ounces, West says twenty to thirty. Low blood pressure is not a contraindication, unless the patient be actually *in articulo*. Only, in the presence of low blood pressure we should remove less. The low tension may be an indication of an overfilled and struggling heart. The removal of a small quantity of blood removes part of the load of the heart, allows it to contract towards its normal limits, and thereby conserves its energy, and promotes its action. Here, in addition, cardiac stimulants, such as strophanthin intravenously, (gr. 1/120th to 1/60th), camphor, or strychnine should be employed. If on account of severe anæmia it be deemed unwise to bleed, recourse may be had to ligation of the lower extremities. Broad rubber bands are applied to the upper part of the thighs and just sufficient pressure is made to impede the venous return without interfering with the arterial supply. Tabora has shown that this procedure will reduce an excessive venous pressure, and that it may cut short the pulmonary oedema that sometimes develops in the course of pneumonia. The bandages should be removed very cautiously in order to obviate a sudden rush of blood from the extremities to the heart and lungs.

When recovery has taken place attention should be directed to removing as far as possible the underlying cause, such as nephritis, cardiac insufficiency. Appropriate diet for these conditions should be prescribed. Chloride of sodium should be restricted as much as may be. Drugs like iodide of potash, adrenalin, and pilocarpin should be interdicted. Finally, fatigue, worry, excitement, over-exertion, dietetic indiscretions, should be avoided. This will do much to avert further attacks.

Case Reports

A CASE OF SEVERE PHARYNGITIS IN ASSOCIATION WITH ERYSIPELAS

BY H. S. MUCKLESTON

Montreal

ERYSIPELAS is no stranger to the man engaged in the treatment of ear, nose and throat diseases. Attacking the skin of the face, as it very commonly does, it has as its starting-point in many cases the ala nasi, and less often the external ear.

It can complicate the course of otitis media, rhinitis, accessory sinus infections, or other inflammatory conditions. It then constitutes clinically a new or added disease, seemingly independent in its course of the primary ailment; it tends to militate against the primary healing of sutured wounds, and to retard the closing in of granulating wounds. It arouses in the surgeon's mind grave disquiet as to his operating technique, and he awaits its disappearance with anxiety, that the primary condition may then have nature's best efforts directed to its betterment.

There is, however, another phase of erysipelas to which I wish to turn your attention in this paper. In the course of an acute, severe inflammation of some part of the upper respiratory tract, erysipelas of the face at times makes its appearance, sometimes as an extension by continuity of the original infection, sometimes in parts relatively remote. It is as if the primary infection took hold upon a new area, and not as if a new and complicating ailment presented itself.

Some authors divide the acute infections of the pharynx and larynx into classes or subdivisions, and use the word "erysipelas" in their categories. Bruck's description, for example, I may summarize thus,—high fever, pain, shiny and cedematous mucous membrane, sometimes bullæ, with a tendency for the disease to extend to the adjoining parts or to the outer skin; or the origin

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may be external, and the disease extend inwards. Struempell also recognizes a Schleimhauterysipel.

Semon set himself against this refinement of classification, in a paper entitled, "On the probable pathological identity of the various forms of acute septic inflammations of the throat and neck, hitherto described as acute oedema of the larynx, cedematous laryngitis, erysipelas of the pharynx and larynx, phlegmon of the pharynx and larynx and angina Ludovici."

In medical publications, general and special, there is an abundance of material submitted, wherein the writers present reports of grave pharyngeal and laryngeal infection, resulting all too often fatally. The association of severe pharyngeal inflammation and erysipelas of the skin is not so often reported as to make it a commonplace. I trust you will not count the report of such an association unworthy of a place in these proceedings.

On March 21st, 1914, I was called at 6 a.m. to see Mr. G. W., the physician, Dr. Morgan, asking me to go prepared for a case of quinzy; Mr. W. had fallen ill on the 17th, with what was regarded as an influenzal attack; pain in the throat, and difficulty in swallowing had begun the day before I saw the patient. I found Mr. W. sitting up in bed, with temperature 101° , complaining of pain in swallowing, extreme dryness of the throat, and of feeling something that blocked up the passage; he had been unable to sleep that night, and had so much difficulty in speaking plainly that he by choice replied to questions in writing. He had had no chill. Examination of the nose showed nothing of note; there was a septal deflection, and the turbinates and meatuses were normal. The tongue was dry and blackened, the soft palate and anterior pillars swollen and deeply congested, the palate being dry and ridged, with strings of thick mucus sticking to it; the uvula was greatly swollen, being in size equal to a man's little finger, with scattered petechiæ, and a single large bulla near the tip: the tonsils were congested, but not displaced towards the mid-line; the posterior pillars were swollen and deeply reddened, the swelling extending down the sides of the pharynx to the level of the epiglottis. Except for moderate congestion and slight rounding of the epiglottis, the larynx was free.

The patient complained also of pain below the right ear: there was a palpable gland behind the ramus of the lower jaw. There was no ear-ache or deafness.

Free scarification of the uvula gave marked relief, and the patient could swallow more easily; this was in part attributable to

my use of 10 per cent. cocaine, but not wholly, as this improvement lasted all day.

The evening of the same day, I was called from a meeting to see Mr. W., because he had suddenly become deaf, and there was a discharge from the right ear. I was greatly humiliated at not having looked into the ears in the morning, but was much relieved to find that the deafness and discharge were due to hæmorrhagic bullæ on the meatal wall; one had already burst, and when I punctured the second and cleaned out the canal, I saw the drum membrane of normal lustre, and but slightly injected. The throat condition was somewhat easier, but the pain below the ear more severe; there was some swelling of the auricle.

I did not see the patient again. He lived in one of the suburban towns, and I learned by telephone of his progress. The following day there was a pronounced redness and swelling of the auricle and cheek, but a continued improvement in the pharyngeal inflammation. I communicated with Dr. Morgan, and told him that I was convinced that the skin condition was erysipelas. The later course of the illness justified my diagnosis, for the infection spread to the scalp, and across the head; then down the right side of the neck to shoulder and right arm. There was decided hyperpyrexia, and for some days delirium, but ultimate recovery.

Without the external evidence of erysipelas, I should hesitate to apply the word "erysipelas" to a pharyngitis or laryngitis: I have had in my practice cases of grave infection, for which no word short of "phlegmon" or even "gangrene" could satisfy. Semon reported in his paper fourteen cases of his own, in order of increasing severity: as it happened, none of them seems to have shown erysipelatos signs outwardly.

Reiche and Schomerus have reported a series of thirty-one cases of pneumococcic infection of the throat, grading them, as did Semon, according to severity. Of these eight were severe, and of the eight, two died. Erysipelas developed in one of the two fatal cases, and in one other; in a third there was redness and swelling of the neck, with emphysema. I should like to summarize the report of one of the fatal cases; she was a woman in the last month of pregnancy, who developed a pneumococcic pharyngitis with dyspnoea; labour began on the second day, and terminated on the third; erysipelas developed on the third day; the child died when three days old, and the mother two days later. Pneumococci were recovered in culture from the bullæ of the skin, from the larynx,

the tonsils (here in company with streptococci), and also from the blood of the child.

Leube, of Wuerzburg, has reported a case which bears on the subject: a young woman, suffering from pneumonia, developed facial erysipelas, the ala nasi being its starting-point: from the bullæ on the affected area, pneumococci were grown in pure culture. Leube ascribes the infection to pneumococcus-laden sputum.

Still more pertinent is the series of three cases reported by Delavan; the diagnosis in each case was erysipelas of the pharynx or larynx, and each developed facial involvement, the redness starting at the lips or the nose. The second of his series went through stages of profound toxæmia to delirium, and finally permanent insanity.

Mental symptoms were present in my own patient, and in one of those reported by Semon; this latter patient became violent in his delirium, and attempted suicide; his attempt was unsuccessful, but he died suddenly the following morning.

The fact that the erysipelas showed itself in my case first at the auricle adds to it an otological interest. I have seen erysipelas of the meatus and auricle six times, but so far as I can recall, this one alone had a throat infection as its primary cause. The path of infection would seem to have been through the retro-pharyngeal and deep cervical lymphatic glands.

Though the streptococcus is accepted as the common infecting agent in erysipelas, the power of the pneumococcus to set up what is clinically the same disease is shown by the findings of Reiche and Schomerus and of Leube.

In those cases where the reports were given in sufficient detail, the outward signs of erysipelas succeeded the inward, and appeared on either the third or the fifth day. Cornil, however, published reports on eighteen cases fifty years ago, in half of which the facial eruption was primary, and in the remaining half secondary; of the nine cases where the extension was from without inwards there were seven deaths, and of the nine where the reverse took place there were two deaths. Of the six patients whose reports have been at my disposal, one died, one became permanently insane, and the others recovered. Where recovery did take place, it is of interest that usually the beginning of the facial erysipelas was approximately synchronous with the first alleviation of the throat symptoms.

I cannot do better than repeat Delavan's apt quotation from the writings of Hippocrates. "When erysipelas extends from

within outwards it is a favourable symptom, but when it removes from without to the internal surfaces it is a deadly one."

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It is announced that fifty ambulances given to the French Government by the French Relief Committee of Great Britain, were lost when the vessel which was conveying them to France was torpedoed. It is expected that they will be replaced at once through private contributions.

AN outbreak of diphtheria occurred in the north end of London at the beginning of October. The cases were confined almost exclusively to children. Prompt measures were taken with the result that no further cases developed. An outbreak of the same disease occurred in Hamilton and in one neighbourhood two or three deaths occurred amongst school children. The children of this neighbourhood were inoculated and the outbreak was soon quelled.

Editorial

THE PREVENTION AND CONTROL OF CANCER

CAMPAIGNS for the prevention and control of cancer have been carried on in recent years with much activity and vigour by special societies and public bodies. Like all popular enterprises which have for their purpose the enlightenment of an ignorant laity on difficult scientific and technically intricate subjects, they present a good and a bad side.

If it is their purpose to acquaint the masses with well recognized facts and scientifically founded ideas regarding the origin, cure, and possible prevention of this dreadful disease, they are to be welcomed and to be highly commended.

If, on the other hand, they serve to spread, under a pseudo-scientific cloak, personal views or uncertain rumours, the true value of which cannot be properly judged by the average person, then such movements must be condemned not only as unscientific, but as dangerous.

A great deal of mischief has already been done by the scientific and lay press in regard to the question of increased mortality from cancer. By many it is now assumed to be a fact that deaths from cancer are increasing, but in reality we are far from knowing anything definite about it. American statistics are quite useless for this purpose; partly for technical reasons, which were presented in great detail and thoroughness by Dr. E. F. Bashford (Middleton-Goldsmith Lecture before the New York Pathological Society, in 1912; also a later article in the *Lancet* on "Fresh claims in the increase of cancer," February 7th, 1914); and partly because the training in pathological anatomy and histology in the United States has been so wretchedly poor that even the diagnosis of cancer

on the death certificate has been a more or less uncertain quantity (see Oertel—"The inaccuracy of American mortality statistics"—in the *American Underwriter*, May, 1913, vol. 39, p. 137; and Graham Lusk—"Medical education in the United States," read before the Seventeenth International Medical Congress, London, 1913, and published in *Science*, vol. 38, October 10th, 1913).

Even in European countries, where statistics have been kept in the past with much greater accuracy and care, it has only in recent years become possible to record and compute them in a manner which makes them useful in this regard. (See "On changes in the recorded mortality for cancer, and their possible interpretation," by Major Greenwood, Jr., and Frances Wood, in "Proceedings of the Royal Society of Medicine, 1914," vol. 7, section of epidemiology and State medicine—with following discussion).

Thus we must warn against a present view, prevalent even amongst physicians, that an increase in cancer mortality has been definitely shown.

More directly harmful, however, are activities on the part of certain cancer hospitals and specialists, which have for their purpose the diffusion of their personal views on a specific treatment of cancer. We have before us at this writing a fly-leaf, distributed by a well recognized and well reputed Metropolitan skin and cancer hospital, entitled "Directions for cancer patients."

Amongst these directions there appear:

"It is not necessary to operate on every cancer. X-ray and radium are often of value, and the disease may disappear and remain absent under proper dietetic and medical treatment.

"This treatment consists in an absolutely vegetarian diet, with continuous proper medication, for a long time.

"To get favourable results, this treatment should be kept up strictly, until discontinued by the physician.

"To assist in carrying out a strictly vegetarian diet,

a diet list for cancer is here given, which should be closely adhered to. Coffee, chocolate, and cocoa, as also alcoholic drinks, even beer, are harmful, and must be avoided. The rules given at the end are also strictly to be observed."

Then follows a remarkable vegetarian diet list, which, in all probability, would shortly so disgust any cancer patient as to lead him to pray for his speedy demise. On the last page of the leaflet we are further enlightened by the statement that it is desirable for cancer patients to eat the skin of potatoes, and one or two other equally interesting and important directions.

Such activities, emanating from well reputed institutions and persons, are much to be regretted, and they are detrimental, not only in themselves, but because they injure and degrade the activity of those who sincerely endeavour to obtain a truthful and reliable public enlightenment.

Our attitude in no way detracts from, or is intended to minimize, the importance of the matter, but it considers that, even in popularizing scientific subjects, strict adherence to well established facts and elimination of all matters still unsettled and under discussion, is the best policy.

THE MEDICAL SCHOOLS

THE work of the session 1915-1916 is now well under way in all our Canadian medical schools. As was to be expected, the war has had its effect upon the activities of these institutions. Fewer enrolments are reported from all the schools. For instance, at the University of Toronto, 507 students have registered this year in the medical faculty as compared with 568 last session; at McGill University, 222 as compared with 394; and at Manitoba College, 108 as compared with 180. This reduction is due not so much to a falling-off in the first year, the members of which may be said barely to have reached the age for military service, as to the enlistment of numbers of the senior students, who were already fitted to do effective work in the various medical organizations.

The inroads upon the staffs of the various schools have been relatively even more marked; for, in addition to the men attached to the regular army medical service, the full complements of the university hospital units have necessarily been furnished by these bodies. Notwithstanding this, the teaching work as a whole has not been seriously interfered with, although in some departments, through the reduction of the staff, a great deal of extra work has devolved upon those who remain.

For reasons other than the war, the present session will be remembered as noteworthy in some of our schools. The first session at the Institute of Public Health, which was established as the Public Health Faculty of Western University by the Ontario Government, was inaugurated on October 1st. This course, open only to graduates in medicine, consists of a winter session of eight months devoted to advanced laboratory and contagious hospital work; followed by a summer course of three months during which the candidates act in rotation as assistants to the professors in the department, who are *ex-officio* heads of the board of health of the city of London. In the medical faculty courses are being given in comparative anatomy and biology by Professor A. D. Robertson, and in physics by Professor E. F. Barker, newly appointed to these chairs. During the summer a physical laboratory was established and equipped and in other departments new equipment was added. A business office for the school has also been provided.

At Dalhousie University, the faculty of medicine is now housed in the old university building, the faculties of arts and science having moved out to the new buildings on the Studley estate, a beautiful situation close to the North West Arm. The faculties of law, medicine, dentistry, and pharmacy share the large old college building, which provides ample accommodation for the laboratories. Especially have anatomy and physiology benefitted by this change. The laboratories of histology and the new dissecting rooms are particularly well lighted.

This year the University of Alberta is giving the first three years of a medical course instead of two as previously. Arrangements have been made with the Universities of McGill and of Toronto to accept students without examination at the conclusion of a three years' course, so that they may take their fourth and fifth years in the east. It is hoped, however, that next autumn the university may itself be able to provide the additional two years. At the Medical College of Manitoba one year's work in science is now required for admission to medicine.

A CONFERENCE took place at Ottawa, on October 18th, between the representatives of the Military Hospital Commission and the premiers of the provinces. A recent amendment to the Order in Council by which the Commission was appointed, empowers that body "to deal with the question of employment for members of the Canadian Expeditionary Force on their return to Canada, to coöperate with provincial governments and others, for the purpose of providing employment as may be deemed necessary." The Commission has already taken steps to arrange for convalescent homes for those returning from the front who require a period of rest in order to regain the health they have lost, and at the recent conference a statement was submitted, prepared by the secretary of the Commission, in which was set forth a plan whereby the question of employment, not only for disabled men, but for able-bodied as well, on their return to civil life, could be carried out. Appendices were added to this statement giving particulars of the steps which have been taken in Great Britain and on the Continent of Europe to meet the situation there. On behalf of the provincial governments, the ministers expressed entire willingness to do the utmost in their power to assist the work of the Commission. Enquiries will be instituted concerning the facilities offered in each province, and a report made to Ottawa. It is probable that provincial commissions will be appointed, which in turn will

appoint local committees, and that arrangements for the reception and training of members of the Expeditionary Force will be made with universities, technical schools, agricultural colleges, schools for the blind, etc., and with sanatoria for those who are suffering from tuberculosis.

A LAW has recently been adopted by the provincial government of Saskatchewan, whereby the sum of \$25 will be paid to a mother each time she gives birth to a child and \$15 to the physician who attends her.

UPPER LODGE, the beautiful royal domain at Bushey Park, Surrey, has been offered by His Majesty the King to the Canadian Red Cross. The offer has been accepted by General Carleton Jones on behalf of the Canadian Medical Service, and the house will be furnished and equipped as a convalescent home at once under the direction of Colonel Hodgett. It will be called the Princess Mary's Canadian Red Cross Convalescent Home and will be equipped with three hundred beds.

AN interesting article on "The English side of medical education," by Mr. Abraham Flexner, appeared in the October issue of the *Atlantic Monthly*, in which a comparison is drawn between the English and the German methods of teaching. The pros and cons of each method are considered by Mr. Flexner, who arrives at the very proper conclusion that the way of improvement lies in a combination of the clinical and university systems of teaching.

THE following resolutions were unanimously adopted by the House of Delegates of the Medical Society of the State of Philadelphia on September 22nd, last: "*Whereas*, an important drug, necessary for the cure of disease and likewise the prevention thereof, is no longer available to the medical

profession of this country by reason of the European war, and, *whereas* this drug has been produced in this country, but cannot be supplied to physicians because its manufacturer is protected by patents, therefore, be it *resolved* by the Medical Society of the State of Pennsylvania that the Secretary of the Interior or the Commissioner of Patents be respectfully urged to call upon the patentees to supply this drug or permit the same to be supplied by others, or to take such other means as his judgement may dictate to relieve the existing condition." Salvarsan, as well as other arseno-benzol products, has been prepared in the Dermatological Research Department of the Philadelphia Polyclinic by Drs. Schamberg, Raiziss, and Kolmer during the past year, and over one hundred injections of the drug have been given to hospital patients with excellent therapeutic results and without untoward effects.

THE tale of horror is not yet complete. The execution of Miss Cavell, at Brussels, is another instance of German brutality. An Englishwoman and a nurse, Miss Edith Cavell was head of a training school in Brussels. When that city fell into the hands of the Germans, she voluntarily remained there and devoted herself to nursing the wounded, whether English, French, Belgian, or German. On August 5th, last, she was arrested by the German authorities and charged with assisting English, French, and Belgian soldiers to escape from Belgium. A court martial was held and sentence of death was passed on October 11th, despite every effort on the part of the American and Spanish ministers at Brussels to save her life. Shortly before two o'clock on the morning of October 12th, a party of six men and an officer was drawn up in a walled-in yard to await Miss Cavell, who was blindfolded. She stepped bravely forward until her strength failed and she fell in a swoon thirty paces from the wall where she was to have been shot. The officer advanced and, in cold blood, shot her through the head as she lay unconscious on the ground. It is superfluous to make further comment.

IN his second dispatch, Sir Ian Hamilton made the following comment on the difficulties encountered by the medical services in the Dardanelles: "The Royal Army Medical Service have had to face unusual and very trying conditions. There are no roads, and the wounded who are unable to walk must be carried from the firing line to the shore. They and their attendants may be shelled on their way to the beaches, at the beaches, on the jetties, and again, though I believe by inadvertence, on their way out in lighters to the hospital ships. Under shell fire it is not as easy as some of the critically disposed seem to imagine to keep all arrangements in apple-pie order. Here I can only express my own opinion that efficiency, method, and even a certain quiet heroism have characterized the evacuations of the many thousand of our wounded." The medical arrangements for dealing with the sick and wounded are entirely in the hands of the Royal Army Medical Corps, but the naval authorities control the working of the ships, of which there are fifty, through a naval hospital transport officer.

IN the June number of the *North American Review*, Dr. McLane Hamilton, discussing the mentality of the Kaiser, declares him to be "a menace to the world, for the reason that he not only has shown the exceedingly bad judgement that belongs to those who are mentally inferior, but has delusive ideas of grandeur and consequent power of persecution and conspiracy." In "The Psychology of the Kaiser," Dr. Morton Prince attributes the mental state of this modern Caligula to a subconscious phobia—a fear of democracy. On page 327 of *British Medical Journal*, issue of August 28th, a review of Dr. Cabanès' "History of the Hohenzollerns" is given. In stigmatizing the Hohenzollerns as a "Dynasty of Degenerates" Dr. Cabanès perhaps has gone too far, as the Editor so ably points out on page 331 of the same issue of the *Journal*. The question is of more than scientific interest: it has acquired a human significance through the lives that have been sacrificed in the present conflict.

Book Reviews

THE TONSILS, FAUCIAL, LINGUAL, AND PHARYNGEAL, WITH SOME ACCOUNT OF THE POSTERIOR AND LATERAL PHARYNGEAL NODULES. By HARRY A. BARNES, M.D. Illustrated. Price, \$3.00. St. Louis: C. V. Mosby Company, 1914.

This book presents in a clear and interesting form a résumé of our present knowledge about the tonsils. The development and anatomy are described and what is known of the functions discussed. The pathological and clinical features are of particular interest and are treated in a very satisfactory manner. The work is fully illustrated with microphotographs and drawings, which are good and add much to the interest of the text. The author is to be congratulated upon his excellent work.

TEXT-BOOK OF MEDICAL CHEMISTRY AND TOXICOLOGY. Fourth edition. By JAMES W. HOLLAND, A.M., M.D., Sc.D., emeritus professor of medical chemistry and toxicology, and Dean, Jefferson Medical College, Philadelphia. W. B. Saunders, Philadelphia and London, 1915. Price, \$3.00 net. Canadian agents: J. F. Hartz Company, Limited, Toronto.

THIS is a book of six hundred and fifty pages and index, with the addition of several coloured plates. Its contents are divided into, Introduction—metrology, heat, magnetism and electricity, and light, sixty-one pages; The Chemical Elements—non metals and metals, three hundred and two pages; Organic Chemistry, one hundred and eighty-four pages; Physiologic Chemistry, one hundred and three pages. The author describes under metrology the various units of weight and measure, and specific gravity. Under heat he takes up thermometry, specific heat, freezing, boiling and evaporation, indicating briefly the application of the Le Chatelier principle and the phase diagram. In the section on electricity and magnetism the various battery cells are described, also the principles of the induction coil and the methods for the production of cathode and Roentgen rays; whilst under light is

included an account of the methods of polarimetry and spectroscopy.

The systematic treatment of the elements commences with the study of oxygen, ozone, hydrogen, water and hydrogen dioxide, and illustrations are given of reversible processes, mass action, chemical equilibria, intrinsic energy. Then follows a chapter on solution, diffusion, dialysis and osmosis. After discussing nitrogen and the atmosphere and carbon and its oxides, the author proceeds to state the atomic and molecular constitution of matter. Avogadro's Law is deduced from the behaviour of different gases under changing temperature and pressure. From this we are led up to Gay Lussac's law of combining volumes which is summarized in the following forms, "gaseous elements combine in equal volumes for their respective atomic weights."

The treatment of the elements and compounds may be illustrated by the case of iodine which is discussed under the following paragraphs: occurrence, preparation, physical properties, chemical properties, starch iodide, iodides, incompatibles, medical uses, toxicology, symptoms, fatal dose, fatal period, treatment, post-mortem appearance, detection, iodism, hydrogen iodide, U.S.P. preparations, oxyacids.

The cyanogen group and oxalic acid are treated under the non metals. A table of the elements is given in which elements of the same valence are grouped together with the atomic weights in arithmetical progression. This lacks many of the best features of Mendeleeff's table, and does not appear to have any advantages over the latter. A final group has to be reserved for metals that will not fit in anywhere else and in this group copper, silver and gold appear along with the iron and platinum families.

The discussion of the organic compounds follows the usual kind of sequence except that the aliphatic amines and amides are left out till the end of the aromatic series when a chapter follows on ammonia derivatives including aliphatic amines, amides, urea, amido acids and alkaloids. There follow sections on ptomaines, toxins, proteins, ferments. The physiological section includes energy of foods, digestion, saliva, gastric and pancreatic juice, bile, intestinal juice, blood, faeces, milk, and urine.

Books Received

The following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

PRACTICAL MEDICINE SERIES. Edited by CHARLES L. MIX. Chicago, Year Book Publishers, 1915. Vol. V, PEDIATRICS; ORTHOPEDIC SURGERY. Edited by JOHN RIDLON, A.M., M.D., professor of orthopedic surgery, Northwestern University Medical School, with the collaboration of CHARLES A. PARKER, M.D. Price \$1.35.

TEXT-BOOK OF SURGERY, FOR STUDENTS AND PRACTITIONERS. By GEORGE EMERSON BREWER, A.M., M.D., professor of surgery at the College of Physicians and Surgeons, Columbia University, New York; assisted by ADRIAN V. S. LAMBERT, M.D., associate professor of surgery, College of Physicians and Surgeons, Columbia University; and by MEMBERS OF THE SURGICAL TEACHING STAFF OF COLUMBIA UNIVERSITY, third and enlarged edition, thoroughly revised and rewritten Lea & Febiger, Philadelphia and New York, 1915.

INDEX OF PROGNOSIS, AND END-RESULTS OF TREATMENT. By VARIOUS WRITERS. Edited by A. RENDLE SHORT, M.D., B.S., B.Sc. (Lond.), F.R.C.S. (Eng.), Hunterian professor, Royal College of Surgeons Bristol: John Wright & Sons, Limited. London: Simpkins, Marshall, Hamilton, Kent & Company, Limited. Toronto: The Macmillan Company of Canada, Limited, 1915.

FRACTURES AND DISLOCATIONS, DIAGNOSIS AND TREATMENT. By MILLER E. PRESTON, A.B., M.D., first lieut. M.R.C., U.S.A., with a chapter on RONTGENOLOGY. By H. G. STOVER, M.D., professor of rontgenology, School of Medicine, University of Colorado. St. Louis: C. V. Mosby Company, 1915.

OPERATIVE GYNÆCOLOGY. By HARRY STURGEON CROSSEN, M.D., F.A.C.S., associate in gynæcology, Washington University Medical School, and associate gynæcologist to the Barnes Hospital. St. Louis: C. V. Mosby Company, 1915. Price \$7.50

THE BIOLOGY AND TREATMENT OF VENEREAL DISEASES, and THE BIOLOGY OF INFLAMMATION AND ITS RELATIONSHIP TO MALIGNANT DISEASE. By J. E. R. McDONAGH, F.R.C.S., surgeon to out-patients, London Lock Hospital. London: Harrison and Sons, 45 Pall Mall, S.W., 1915.

THE ETIOLOGY OF TYPHUS EXANTHEMATICUS. By HARRY PLOTZ, PETER K. OLITZKY, and GEORGE BAEHR, from the pathological laboratory, Mount Sinai Hospital, New York. Reprinted from *The Journal of Infectious Diseases*, Vol. 17, No. 1, July, 1915, pp. 1-68.

HANDBOOK OF PHYSIOLOGY. By W. D. HALLIBURTON, M.D., LL.D., F.R.C.P., F.R.S., professor of physiology, King's College, London. Twelfth edition, with nearly 600 illustrations in the text. Philadelphia: P. Blackiston's Son & Company, 1012 Walnut Street, 1915. Price, \$3.00 net.

DISEASES OF THE NERVOUS SYSTEM: A TEXTBOOK OF NEUROLOGY AND PSYCHIATRY. By SMITH ELY JELLIFFE, M.D., Ph.D., adjunct professor of diseases of the mind and nervous system, New York Post-Graduate Medical School and Hospital; and WILLIAM A. WHITE, M.D., superintendent of the Government Hospital for the Insane, Washington, D.C., professor of nervous and mental diseases, Georgetown University. Illustrated with 331 engravings and 11 plates. Lea & Febiger, Philadelphia and New York, 1915.

POTTER'S COMPEND OF HUMAN ANATOMY. Revised by D. GREGG METHENY, M.D., L.R.C.P. and S. (Edin.), L.F.P.S. (Glasgow), associate in anatomy, Jefferson Medical College, Philadelphia. Eighth edition, with 139 illustrations; also numerous tables and 16 plates of the arteries and nerves. Philadelphia: P. Blackiston's Son & Company, 1012 Walnut Street, 1915. Price, \$1.00 net.

TRANSACTIONS OF THE AMERICAN UROLOGICAL ASSOCIATION: THIRTEENTH ANNUAL MEETING AT PHILADELPHIA, PENN., JUNE 18TH, 19TH, 20TH, 1914. Publication Committee: HUGH CABOT, RICHARD FROTHINGHAM O'NEIL, GEORGE GILBERT SMITH. Printed for the Association at the Riverdale Press, Brookline, Mass., 1915.

COLLECTED CONTRIBUTIONS, (a) PSYCHOPATHIC HOSPITAL. Department of the Boston State Hospital. Whole numbers 35-63 (1914.1-1914.29). (b) STATE BOARD OF INSANITY. Whole numbers 21-34 (1914.1-1914.14). 1914, Boston, Mass.

AIDS TO PHYSIOLOGY By JOHN TAIT, M.D., D.Sc., lecturer in experimental physiology, Edinburgh University; and R. A. KRAUSE, M.D., D.Sc., lecturer in hygiene, College of Hygiene and Physical Education, Dunfermline. Publishers: Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden, London, 1915. Price, 3s. net.

THE NEW PSYCHIATRY. Being the Morison Lectures delivered at the Royal College of Physicians of Edinburgh in March, 1915. By W. H. B. STODDART, M.D., F.R.C.P., lecturer on mental diseases to St. Thomas's Hospital. Publishers: Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden, London, 1915. Price, 3s. 6d. net.

THE first official list of casualties in the Canadian Expeditionary Force was issued October 25th. The figures are complete up to October 16th last. Total number of casualties, 15,187; killed in action, 94 officers, 1,625 men; died of wounds, 25 officers, 654 men; died of illness, 6 officers, 172 men; accidentally killed, 2 officers, 38 men; prisoners of war, 56 officers, 1,251 men; missing, 32 officers, 1,110 men; wounded and ill, 467 officers, 9,660 men. The figures given for those wounded and ill include all who have passed through the field hospitals, many of whom were able to return to their regiments in a very short time.

Res Judicandæ

WORK FOR THE AGED PHYSICIANS*

BY JOHN HUNTER, M.B.

Toronto

MEN grow old in two ways, chronologically and physically, but these are by no means necessarily synchronous. Dr. A. was born away back in the thirties, or forties, of the past century, and we say that he is getting to be a pretty old chap, while we speak of Dr. B. as an old man because he is frail, though his birthday may date much later than Dr. A's. There are many of the Dr. A. class in our ranks. What special use can be made of their strength and vim?

Three courses are open to the aged physicians. (1) They may continue their vocation as long as mentally and physically fit. (2) They may retire and simply "mark time" as best they can. (3) They may seek a new vocation. The first of these, though ethical and laudable, has its handicaps, for as "life runs on the road seems strange with methods new." The aged physician feels disinclined to take up much new work since he knows that his time must be too short to master the many innovations pressing for recognition. The knowledge and skill required for the x-ray, radium, catheterization of the ureters, preparation of serums, bronchoscopy, the Wassermann reaction, blood pressure, spinal puncture, etc., seem scarcely worth the effort at his stage of life. The loss of congenial companions is keenly felt, and to this must be added the disabilities incident to impaired memory, hearing, and sight. His families change too, for in many of them there are no longer any children to require attention, hence his income is an ever diminishing one. The second course, viz., simply to "rust out" is quite tragic, for, by willingly adopting it, one withdraws from the use of his patients the knowledge he has acquired from study and observation and also the experience he has obtained in practice. The third course, viz., a change of vocation, is beset

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with many pitfalls. The physician may invest his savings in some enterprise with which he is not familiar and lose all.

The writer, in the limited space at his disposal, can only outline somewhat crudely a new field that is open to all our medical veterans. It is one that might prove a very pleasant and useful pastime. It is a special form of research work, namely, to undertake to review whatever medical literature they have access to and to record their own most interesting experiences. In every village, town, and city throughout the Dominion, the aged physicians in that area could meet and bring their contributions. These could be compared and selections made of those most representative of the medical culture and experience of that community. These selections could be forwarded to a provincial committee to be kept on file in a library and used by the local medical journals. The provincial committees could be instructed to make selections from the contributions sent to them and to forward these to a Dominion organization for the purpose of having final selections made for publication. While it would be the fate of most of the contributions not to reach the printing press, yet every contributor would have the satisfaction of knowing that his contribution had been heard or read by a number of his confrères and that his work had not been in vain. The volumes that would be published at stated intervals would be thoroughly representative of Canadian medical culture and experience.

The reader may ask what good could be accomplished by this addition to our present supply of medical literature. Have we not a superfluity of medical books and journals now? Are not our book-shelves overburdened with stuff that we cannot possibly find time to read? The very fact that such a condition exists is proof positive that "it is time for a change." The busy man is certainly getting a very poor return for the money he is spending in medical literature. He is like the Northwest farmer who has grown a great crop of grain, but is unable to harvest it and get it to the market. In the hurly and burly of practice what a wealth in literature and in unrecorded experience is lost because our literature is so diffuse and the record of our experience so neglected. How lamentable,—yes, and even tragic too when we think of the sufferings that might have been prevented or assuaged—has been the loss in literature and in experience during the past two milleniums. Since the time of Hippocrates, centuries have come and gone, leaving scarcely any trace of the culture and experience of the physicians who lived during that time. Why? Because human nature is so much the

same in every age. People are too busy, too selfish, or too careless to take the time and the trouble necessary to make a proper valuation of what they have. Health must be impaired or lost; friends have to go away, or die; riches must take to themselves "wings and fly away",—all these must happen before we can form any adequate appreciation of their worth to us. In the ages that have gone a great multitude of medical men must have been so engrossed in life as they found it that they were oblivious to all that had gone on before, and apparently perfectly indifferent to what was to follow after them. So self-centered in place and era were these men that they left no trace even of themselves. What a contrast between their obscurity—the sequence of selfishness, indolence, indifference,—and the immortality of an Hippocrates, Galen, Harvey, Hunter, Lister,—the sequence of unselfishness, unwearying industry, and insatiable zeal!

Were our aged practitioners to assemble themselves in smaller or larger groups, all over the Dominion, to review medical literature, past and present, their work would be akin to that of the sturdy miners who delve into the earth and bring up treasures in gold, in silver, and in precious stones. In the libraries of our medical veterans many books are to be found which were written by men of great erudition, and of wide experience. Many of the classics in medicine were written one or more centuries ago. Out of these, our older members, in the serenity of old age, and with their hours of leisure, could bring to light many a forgotten fact. Out of their own experience also they could recall much of interest and of value to our science and art. These excerpts and reminiscences would form a strong bond of union between the past and the present. How very little our busy men know or even care about the privations and difficulties our pioneer doctors had to contend against and how praiseworthy were their achievements and their virtues.

These meetings would not only be very congenial and profitable to the fathers themselves but the fruits of their labours would be of inestimable value to their grandsons in their first decade in practice, and also to those in "the stress and strain" of mid-life. The excerpts and reminiscences would prove a wholesome anæsthetic in assuaging that noisy assurance of being "the latest thing out", so very evident in the attitude and speech of young men during their first decade in practice. Were these youths to confine the exhibition of their delusions to the inmates of lodge or club-room not much harm would be done, but when they try to obtrude it upon their seniors, or in medical societies, much valuable time and

energy are sacrificed. It is true the middle-aged, and even the aged, may harbour their delusions, but wisdom and experience render these quite harmless. There are many men in mid-life so obsessed by their work as to be under the conviction that they have not time for rest, study, or the careful observation of what others are doing, or of how they are doing it. These men only enjoy an ephemeral success, for others come with better methods and the erstwhile hustlers sink into oblivion. The wise and practical men in mid-life would thoroughly appreciate the privilege of having a volume or two in which they could find, in concise form, the richest treasures in medical literature and the ripest experience of older men. The busy surgeon or consulting physician could find in these pages just what he needs.

In conclusion, the reader may say that this scheme is too visionary. Be that as it may, the facts remain that we have a great wealth in our medical literature, unused, and therefore unproductive. There is a vast amount of experience being lost because unrecorded, and we have on our list a large number of exceptionally vigorous old men, well-equipped from culture, observation, and experience, and with leisure time on their hands to do a large amount of research work, who could leave on record a wealth of practical experiences. Would not this form of research work prove both a profitable and a fascinating pastime for the leisure hours of the veterans. What memories would be awakened as they took down the old books, brushing off, perchance, the accumulated dust of decades, and re-reading the pages that would recall many faces and hallowed memories of far-distant student days. Would they not live most of their lives again as they recalled past experiences. Would not the middle-aged feel that their arduous labours were not in vain, but as the coral insects, they were helping to rear a great science, like an island, for the benefit of the race; and to the young men would not these beneficent labours of their grandfathers be an inspiration to make their young lives sublime?

"Men's thoughts and men's opinions
Are tides that ebb and flow,
On ever-shifting currents
Their minds drift to and fro."

Obituary

DR. PERCIVAL C. CASSELMAN, of Morrisburg, Ontario, died at the Royal Victoria Hospital, Montreal, on Thursday, September 30th. Dr. Casselman was born in Matilda Township in 1873; he graduated from McGill University in 1899. He became house surgeon at the Brockville General Hospital, and from there went to the Royal Victoria Hospital, Montreal. Later, he joined the staff of Dr. Gardner's Private Hospital, Montreal, and in 1901 went into practice at Morrisburg. Dr. Casselman leaves two children, aged five and six respectively.

DR. LAUCLIN SINCLAIR, of Walkerton, Ontario, died September 14th, in the seventy-seventh year of his age. Dr. Sinclair was born in Middlesex County. Before taking up the study of medicine he taught for some time; he then entered the University of Michigan where he obtained his medical degree in 1864. He joined the medical service of the United States army at the commencement of the Civil War and was present at the battles of Resaco and Nashville. When the war was over, Dr. Sinclair returned to Canada and went into practice in the village of Napier. In 1868 he went to Walkerton, where he continued to practise until the time of his death. Dr. Sinclair was surgeon to the jail for many years, and it was due largely to his continued efforts that the Bruce County Hospital was established at Walkerton. He leaves one daughter and a son, Dr. Herbert H. Sinclair.

DR. R. J. S. WHEELER, of Birtle, Manitoba, died at the Winnipeg General Hospital on September 16th, in the fifty-third year of his age. Born at Cork, Ireland, and a graduate of Dublin University, Dr. Wheeler came to Canada about thirty years ago and settled at Arrow Smith, where he soon built up a good practice. Ten years later, he removed to Birtle. He leaves a widow, three daughters, and a son.

DR. JOSEPH H. PETERS, of Hamilton, died at Fergus, October 7th. Dr. Peters was a graduate of Toronto University and had been practising in Hamilton for about four years.

DR. KENNETH JUNOR died at Toronto on September 26th. Dr. Junor was born at St. Mary's, Ontario, and attended the Grammar School there. After graduation, he spent some time as missionary in Formosa and, later, went into practice at Brooklyn, New York.

DR. W. A. CAMERON died from typhoid fever in the Moncton Hospital on Friday, October 1st. Dr. Cameron contracted the disease during the recent epidemic at Dorchester, Nova Scotia, where he was in practice. He was born at Advocate, Nova Scotia, and graduated from the University of Toronto last year. He was twenty-seven years of age and had been practising in Dorchester only four months.

DR. S. B. CORBETT died at Vancouver on September 9th. Dr. Corbett was born in 1846 and graduated from Victoria University in 1867. He practised in Winnipeg.

DR. J. A. R. LEONARD, of Montreal, died September 16th, in the sixty-fifth year of his age. Dr. Leonard was born at St. Vincent de Paul; he obtained his medical degree in 1876 from the Montreal Ecole de Médecine et de Chirurgie, which united with Laval University in 1891. He practiced at St. Cunegonde.

DR. ALPHONSE J. P. GARNEAU, of Fall River, Massachusetts, died September 21st. Dr. Garneau was born at Lotbinière and graduated from Laval University, Quebec. He practised at Fall River for thirty-two years.

DR. HENRY SMITH, of Norfolk, Vermont, died in September. Dr. Smith was a Canadian by birth and was born near Hamilton in 1836; he had practised in Norfolk for thirty-three years.

DR. WILLIAM F. PARMENTER, dean of the faculty of medicine at the University of Buffalo, recently died at Port Stanley, Ontario. Dr. Parmenter was born at Gananoque and first went into practice near Cayuga, Ontario. He went to Buffalo in 1875.

News

MARITIME PROVINCES

A HOSPITAL is in course of construction at Newcastle, New Brunswick. The funds for the building and equipment have been subscribed and an endowment fund has been commenced. It is hoped that the building will be finished early in the spring of next year.

AN epidemic of typhoid fever is reported from Dorchester, New Brunswick. Several deaths have occurred, amongst others that of Dr. W. A. Cameron who contracted the disease in the performance of his professional duty. On October 4th, a mass meeting of the citizens was held to consider the best means of quelling the outbreak. Since the late Dr. Cameron was the only practitioner in the town, Dr. C. P. Atkinson, of Moncton, was asked to render assistance, and at the above meeting it was resolved by the citizens that he should be requested to remain until the epidemic is over. Grave dissatisfaction was expressed on account of the failure of the county board of health to deal promptly with the situation and to provide medical assistance. Dr. Gaudet, of St. Joseph's is assisting Dr. Atkinson.

ONTARIO

THE deaths in the province during the month of September numbered 390 as compared with 462 in the same month last year, and 516 in September, 1913. The cases of infectious disease reported were as follows: smallpox, 8 cases; scarlet fever, 76 cases, 2 deaths; diphtheria, 140 cases, 12 deaths; measles, 105 cases, 5 deaths; whooping cough, 114 cases, 4 deaths; typhoid fever, 148 cases, 13 deaths; tuberculosis, 101 cases, 54 deaths; infantile paralysis, 2 cases, 2 deaths; cerebrospinal meningitis, 4 cases, 3 deaths.

THE corner stone of the new hospital at Port Hope was laid on October 1st, by the Honourable Mr. Justice H. A. Ward, in the presence of a large number of citizens. The cost of the building is estimated at \$24,000, of which \$20,000 was bequeathed by the

late Mr. John Helm. The new hospital will be completed about March and the present building will then be used as a nurses' home.

DR. C. R. CHARTERIS will act as medical officer of health of Chatham until Dr. Musson's return from active service.

DR. DANIEL PHELAN, surgeon to the Kingston Penitentiary has retired after nineteen years of service. Dr. Phelan graduated from Queen's University in 1877.

A HOSPITAL is being built at Cochrane and will be finished about Christmas time.

DR. D. A. COON, medical superintendent of the Kingston General Hospital, has resigned.

THE sum of \$20,000 was collected for the Canadian hospitals in England and France on the occasion of the united patriotic fête which recently took place in Hamilton.

THE annual meeting of the Carleton County Protestant General Hospital took place on October 14th. The year ending September 30th has been a successful one and the finance committee has been able to reduce the overdraft by more than \$2,500. The number of patients admitted during the year was 2,743, including a number of soldiers, the institution having been appointed a base hospital at the beginning of the war. Several improvements and alterations were made during the period under consideration, but at the present time it is not possible to enlarge the building although additional accommodation is needed.

QUEBEC

THE official opening of the new civic hospital for infectious diseases took place on the afternoon of September 30th. The ceremony was attended by a large gathering, among those present being the Lieutenant-Governor of the province, the Honourable P. E. LeBlanc, Cardinal Begin, the Mayor of Quebec, Major Pelletier, Dr. A. Simard, president of the College of Physicians and Surgeons of the province of Quebec, and Dr. Dussault, president of the Health Department, who delivered the inaugural address. The hospital will be under the supervision of the Sisters of the Grey Nunnery.

MANITOBA

DR. B. J. McCONNELL has been appointed coroner for the city of Winnipeg. Dr. McConnell is a graduate of Queen's University.

ALBERTA

SEVERAL cases of typhoid recently occurred on the Duke of Sutherland estate farms, near Brooks.

THE annual meeting of the College of Physicians and Surgeons, of Alberta, took place at Edmonton on Thursday, October 14th. Dr. F. W. Crang, of Edmonton South, was elected president.

DR. W. W. MILBURN, of Macleod, has been appointed physician for the Blood Reserve in succession to the late Dr. Edwards.

SASKATCHEWAN

SEVERAL cases of typhoid fever have occurred among harvesters in some of the country districts, but the number of cases throughout the province has been much less this summer than in former years.

AN outbreak of typhoid fever recently occurred at Lipton, but was soon quelled by the prompt action of the public health officials. During the month of September 113 cases of the disease were reported in the province. Other cases of infectious disease reported were: diphtheria, 11; measles, 29, chickenpox, 9; whooping cough, 51; smallpox, 12; mumps, 3; scarlet fever, 1; German measles, 1; erysipelas, 4; syphilis, 2. In August, 30 cases of typhoid were reported.

THE Saskatchewan military hospital is in process of organization under the direction of the Provincial Medical Council. The unit, a stationary hospital of 200 beds, with equipment, is the gift of the Medical Association of Saskatchewan. The appeal for funds has met with a generous response throughout the province and already more than half the sum required has been contributed. The provincial government has given \$10,000, and the Medical Council has subscribed an equal amount. Members of the profession in Regina have contributed \$1,000, the Regina branch of the Red Cross has undertaken to endow ten beds, each of which

cost \$50, and the city of Swift Current will provide the operating room, which will cost over \$3,000. The personnel of the unit has not yet been announced.

BRITISH COLUMBIA

DR. WILLIAM ROSS STONE has been appointed resident physician at Vanderhoof.

DR. R. B. WHITE is acting as medical health officer of Penticton, during the absence of Dr. Channing-Pearce, who is on active service.

THE new hospital at Grand Forks is now completed. It was erected at a cost of \$20,000.

THE Vancouver branch of the Canadian Red Cross Society and the St. John Ambulance Association have been successful in collecting \$33,901.42 for No. 5 General Hospital, the military hospital given by the province for service overseas. The amount subscribed is more than the sum originally required, namely \$25,000, and reflects great credit upon the generosity of the people of British Columbia and those who have worked so hard to make the campaign a success. An appeal for funds was made to every city, town, and village in the province, and, on August 28th, a tag day was held in Vancouver, when the sum of \$13,955.25 was contributed. The amount has been cabled to Colonel Hart, who is in command of the unit, which is now overseas.

MEDICAL COLLEGES

Dalhousie University

THE Board of Governors of the University at a meeting in September appointed Dr. John Cameron of the Middlesex Hospital, London, to the Campbell Chair of Anatomy as successor to the late Dr. A. W. H. Lindsay.

Dr. Cameron had a brilliant career as a student at the University of Edinburgh where he gained several class medals including the gold medal in the class of anatomy. He graduated M.B., Ch.B. with honours, and later, on taking his M.D., received the gold medal for his thesis. Dr. Cameron is a professional anatomist; and neither a consultant nor practitioner, a highly successful teacher of anatomy and one who has devoted all his time to teaching and to embryological research.

Professor Cameron has held the following appointments; assistant to the professor of anatomy at the University of St. Andrews, senior demonstrator of anatomy, University of Manchester, and for the last six years lecturer on anatomy at the important medical school of the Middlesex Hospital, London, W. Dr. Cameron was appointed while at St. Andrews, Research Fellow of the University; and since then he has been examiner in anatomy to the University of London, examiner to the Royal College of Surgeons, London, and examiner in the University of St. Andrews.

Professor Cameron is a Fellow of the Royal Society of Edinburgh, and a member of council of the Anatomical Society of Great Britain and Ireland. He has for some years been entrusted with the responsible task of indexing the anatomical papers for the International Scientific Catalogue in process of preparation by the Royal Society of London.

As a teacher Dr. Cameron has had conspicuous success, for not only has he trained candidates for the notoriously searching examination of the Royal Colleges, but has also prepared students for the examination in anatomy and anthropology for the B.Sc. degree of the University of London. Professor Cameron has worked more particularly at problems in the development of the tissues especially the retina and sense-organs. He has written papers on the origin of the pineal body, nerve cell, the nerve fibre, and the optic nerve, and has made contributions to the anatomy of the peritoneum. In 1902, Dr. Cameron studied under the celebrated Professor His, of Leipzig.

Dr. Cameron has for many years taken an interest in university contingents of the O.T.C., and has had considerable experience in training these both in Manchester and London. The Dalhousie University is to be congratulated on obtaining Dr. Cameron's services at the present time; the appointment is a good one, for the Medical Faculty is strengthened by a professional or whole time teacher who has already acquired a position amongst British anatomists. It is probable that Professor Cameron's military training will not be overlooked in a university where so few members of the staff can claim to have had any similar experience.

Toronto University

THE following candidates recently passed the supplementary examinations in the fifth year of the faculty of medicine: R. D. Cowan, P. V. Graham, J. B. Hanley, H. C. P. Hazlewood, H. G.

Joyce, W. M. Martyn, A. J. McIntosh, E. H. Stephens, and E. Z. Stirrett.

PROFESSOR THOMAS G. BRODIE, F.R.C.S., who went to England with the University Base Hospital, has returned. Dr. Oliver Mabee has been appointed acting Professor of Pathology until the return of Professor J. J. MacKenzie, whose leave has been extended.

Queen's University

THE degree of M.D., C.M., was recently conferred upon the following successful candidates: A. B. Earl, M.B., McDonald's Corners, Ontario; J. H. Kemp, M.B., Rochester, New York; F. L. Leacock, M.B., Merrickville, Ontario; E. J. Brannan, North Bay, Ontario; N. L. Burnett, Springfield, Massachusetts; W. R. Grant, Sintaluta, Saskatchewan; A. W. Trefry, B.A., Arcadia, Nova Scotia.

Alberta University

THE following candidates have been licensed by the University of Alberta to practise medicine in that province: Drs. G. H. Ingram, of Delia; W. D. Sorensen, of Edgerton; R. T. Washburn, of Weisville, and S. Astrof, of Edmonton. Supplementals in medicine and surgery were granted to Dr. R. A. Smith, of Gladsby.

McGill University

THE examinations of the Medical Council of Canada were recently held in the new medical building of McGill University. Fifty-one candidates presented themselves and of these twenty-seven were successful in passing the examinations and received the qualification of L.M.C.C. They are: S. M. Asselstine, Kingston; A. R. Bayne, Sherbrooke; J. L. Clark, Edmonton, Alta.; A. H. Campbell, Spragge, Ont.; C. T. Crowdy, St. John's, Nfld.; E. B. Convery, Montreal; A. D. Campbell, Toronto; J. Carmichael, Collingwood, Ont.; K. A. Denholm, Blenheim, Ont.; W. V. Edwards, Souris, Man.; B. J. Funk, Hebert, Sask.; J. F. Gallagher, Montreal; D. Martin, Nelson, B.C.; C. R. Joyce, Granby, Que.; R. Lessard, Montreal; D. J. Mackinnon, Medford, Mass.; J. G. Munroe, Montreal; D. A. Macleod, Ottawa; C. Powles, Cape Breton, N.S.; B. C. Patterson, Hallville, Ont.; C. D. Robbins, Montreal; S. O. Rogers, Toronto; Richard Smith, Hopetown, Que.; G. E. Thomson,

Kingsmill, Ont.; J. A. Urquhart, Revelstoke, B.C.; W. A. Vanderburg, Hamilton; J. G. Wright, Kingston, Ont.

The next examinations of the council will be held at Toronto and Winnipeg, coincidentally, in June, 1916.

ARMY MEDICAL SERVICES

IN response to a request from the War Office for more doctors, the following have been selected by Lieutenant-Colonel F. W. Marlow, A.D.M.S. for the Toronto Division, from those who have volunteered to serve with the Royal Army Medical Corps. They will leave for England at once. Lieutenants C. C. McIntyre, A. R. Riddell, S. A. Walker, S. M. Dale, P. J. Harris and G. A. McLarty, all members of the Canadian Army Medical Corps, and senior house surgeons, Toronto General Hospital. Lieutenants E. H. McVicar, A.M.C., St. Michael's Hospital. Dr. R. R. Young, Toronto Western Hospital, and Dr. C. E. Wilson, of Muskoka Hospital. Lieutenant A. B. Mofatt, acting medical officer for artillery; Lieutenant J. Cunningham, Camp Hospital staff; Lieutenant P. P. Rogers, Toronto; Dr. V. E. Cartwright, Gravenhurst Hospital; Lieutenant G. Carleton Toronto; Lieutenant F. L. Thompson, Toronto; Dr. D. A. Warren, Hamilton; Lieutenant R. Home, Toronto; Dr. T. R. Phipps, Toronto; Lieutenant A. M. Murray, Toronto; Dr. W. A. McLeod, Elmsdale; Drs. H. C. Sutton, Port Credit; J. W. Wheeler, Cornwall; A. W. Nixon, Georgetown; A. G. Wallace, Thessalon; E. Bryceson, Toronto; J. J. Hurley, Toronto; W. S. Grimshaw, Toronto; H. C. Moyle, Burlington; W. B. Seaton, Clifford and Toronto; M. D. Kyle, Fergus; W. E. Dean, Toronto; N. N. Ferguson, Toronto; W. W. Conise, Toronto; G. Cooper, Charlton; Captain M. H. Embury, Allandale; Lieutenants, D. M. Kilgour, Toronto; A. M. Robb, Toronto; F. A. Ross, Barrie.

Other physicians who have joined the Royal Army Medical Corps are: Dr. A. Ross, of Charlottetown, Prince Edward Island; Dr. B. Francis, of Sydney Mines, Nova Scotia; Dr. Frederick B. Day, of Thorburn, Nova Scotia; Dr. McKenzie, son of Dr. A. F. McKenzie, of Monkton, Ontario; Dr. W. J. Brown, of Lindsay, Ontario; Dr. Edgar Bissell, of Mallorytown, Ontario; Dr. C. R. Totten, of Windsor, Ontario; Dr. A. B. Roberts, of Saskatoon; Dr. H. B. Stacpole, of Cardston, Alberta; Dr. Howe A. Jones, of Moncton, New Brunswick; Dr. H. C. Murray, of Owen Sound, Ontario; and Major F. J. R. Forster, of Stratford, Ontario.

DR. O. A. CANNON, of Stratford, Ontario, is in charge No. 3 Stationary Hospital, which is stationed on the Island of Lemnos, in the Aegean Sea, together with No. 1 Stationary Hospital. No. 5 (Queen's) is at Cairo. Lieutenant-Colonel Hanford McKee, who was in command of No. 3, has been seriously ill and has been invalided to England.

MAJOR F. GUEST, of St. Thomas, Ontario, is on the staff of a hospital at West Mudros, Lemnos Island, which is about forty miles from the Gallipoli Peninsula.

MAJOR H. H. BURNHAM, of Toronto, who is on the medical staff of the 2nd Brigade, C.F.A., has been mentioned for distinguished conduct.

CAPTAIN HARRY MORRELL, of Regina, is bacteriologist at the Duchess of Connaught Hospital, Cliveden.

MAJOR R. PERCY WRIGHT, of Montreal, has been appointed Officer in Command of No. 1 Field Ambulance, in succession to Lieutenant-Colonel A. E. Ross, who is now assistant director of medical services of the first Canadian division.

DR. DAKIN, formerly superintendent of the Regina General Hospital, has been appointed to a hospital position at Cairo.

DR. JOHN R. WHITMAN, of Brantford, Ontario, accompanied the third universities' overseas battalion, who left some weeks ago to reinforce the Princess Patricia's Canadian Light Infantry.

LIEUTENANT-COLONEL E. C. ASHTON, M.D., of Brantford, Ontario, has been made Brigadier-General.

DR. J. MOORE, of Palmerston, Ontario, is on active service.

LIEUTENANT YOUNG, of Guelph, Ontario, has joined the Army Medical Corps. Dr. Young was on the staff of the Western Hospital, Toronto. Dr. E. Bryceson, of Toronto, has also joined the Army Medical Corps.

THE following have been appointed medical officers of overseas

battalions: Dr. Bailey, of Moose Jaw, of the 46th Battalion which is in training at Camp Hughes, Saskatchewan; Dr. E. E. Meek, of Regina, of the 28th Battalion, now at Sewell Camp, Manitoba; Dr. H. W. Paddell, of Swift Current, Saskatchewan, of the 10th Mounted Rifles; Lieutenant-Colonel Hayes, of the 85th Nova Scotia Highland Regiment, Lieutenant H. C. Davis, of Port Coquitlam, British Columbia, assistant medical officer of the 11th Mounted Rifles.

CAPTAINS JUPP and D. J. McKay, A.M.C., of Woodstock, Ontario, have left for active service overseas.

LIEUTENANTS T. H. LUNNEY, R.A.M.C., of St. John, and O'Donnell, R.A.M.C., of Debec, New Brunswick, have left Aldershot for the British base hospital at Malta. Lieutenants McIntosh, R.A.M.C., of Hartland, and Lawson, R.A.M.C., of St. Stephen, New Brunswick, have joined the staff of a clearing hospital in France.

DR. W. A. HENDERSON, R.A.M.C., of Sarnia, Ontario, has been appointed physician-in-chief of a hospital ship plying between England and the Dardanelles. The ship contains four hundred and fifty beds and has a personnel of six physicians, twelve nurses, and forty-eight orderlies.

DR. WILLIAM NORMAN GILMOUR, of Brockville, Ontario, has joined the Royal Army Medical Corps. Dr. Gilmour, who was in Australia at the time, went to South Africa when the war broke out and joined the forces under General Botha. He afterwards left South Africa and went to England.

THE distinguished conduct medal was recently bestowed upon Private H. T. Cameron, of No. 3 Field Ambulance, First Canadian Division.

DR. J. B. WOODROW, of Edmonton, is serving with the Royal Army Medical Corps in France.

MAJOR C. A. PETERS, of Montreal, has been given the temporary rank of colonel.

DR. CHARLES G. BELL, of Chatham, Ontario, who joined the 34th Battalion as a private, has been transferred to the Army Medical Corps.

THE Salvation Army was recently granted permission to provide a unit of Canadian-built ambulance cars for service at the front. Every corps and institution contributed something to the funds required, and the unit was dedicated by the Lieutenant-Governor of Ontario, Sir J. S. Hendrie, K.C.M.G., on the occasion of the annual congress which was held in Toronto last month. The ambulances will be manned by Salvation Army officers. Similar units have been given by the British Salvation Army for service in France, and by the Australian for service at the Dardanelles.

Dr. H. H. Planche, A.M.C., of Cookshire, Quebec, is on active service at the Dardanelles.

THE Dalhousie Military Hospital is in process of organization. It will have a staff of at least twelve surgeons and physicians, with the corresponding number of nurses, orderlies, and stretcher-bearers. Among those who probably will accompany the unit are Drs. John Stewart, E. V. Hogan, L. M. Murray, Victor Mackay, J. G. MacDougall, Kenneth MacKenzie, S. J. MacLennan, F. W. Woodbury, and John Rankine.

DR. F. H. MEWBURN, of Calgary, is on the staff of the Duchess of Connaught Hospital at Taplow, Buckinghamshire, England. The hospital is supported by the Red Cross, and contains one thousand beds.

DR. OSWALD WITHROW, of Toronto, has enlisted as a private in the 81st Battalion.

DR. ELLA SCARLETT-SYNGE, of Vancouver, has been appointed medical officer for Batochina and the surrounding district, which lies half way between Nish and Belgrade. There is a great shortage of drugs in Serbia and Dr. Synge asks that contributions of drugs be sent to Mrs. Watson, Serbian Relief Committee, 5 Cromwell Road, London, England.

HIS Royal Highness the Duke of Connaught inspected No. 6 Stationary Hospital at Montreal on Thursday, October 14th.

The unit has been supplied by Laval University, and is under the command of Lieutenant-Colonel G. Beauchamp.

CAPTAIN HOWARD HEPBURN is serving on the staff of one of the British field hospitals. Captain Hepburn at one time was the medical superintendent of the Montreal General Hospital; he left Montreal to take the position of medical adviser to the King of Siam.

DR. HAROLD TAIT, R.A.M.C., of St. John's, Newfoundland, is on the staff of a base hospital of three thousand beds at Malta.

CASUALTIES

Seriously Ill

LIEUTENANT-COLONEL H. R. CASGRAIN, of Windsor, Ontario, Officer in Command of No. 3 Stationary Hospital, C.E.F., in hospital at Alexandria; later invalided to England.

MAJOR HANFORD MCKEE, of Montreal, Officer in Command of No. 1 Stationary Hospital, invalided to England from the Dardanelles.

Wounded, September 29th

CAPTAIN WILLIAM J. ENRIGHT, of Port Daniel East, Quebec (22nd Battalion, French-Canadian).

Lost on Transport

DR. LORNE GRAHAM, of Wallacetown, Ontario, lost his life in the Aegean Sea on August 17th, when the transport on which he was serving was torpedoed.

Died

MATRON JAGGARD, of Wolfville, Nova Scotia, died September 25th (No. 3 Stationary Hospital).

NURSING SISTER MARY FRANCES MUNRO, of Wardsville, Ontario, died of dysentery, September 7th (No. 3 Stationary Hospital).

CORRESPONDENCE FROM THE SEAT OF WAR

To the Editor,

CANADIAN MEDICAL ASSOCIATION JOURNAL:

SIR,—Towards the end of May work became very slack at La Panne and, as I wrote before, at this juncture some American Red Cross surgeons arrived and numerous Belgian doctors came also to Dr. Depage's Hospital. There was an increasing demand for medical men in England, so I determined to return here, though one realized what exceptional opportunities La Panne offers, and I was very sorry to leave Belgium after five such stirring months.

The Belgian and French soldiers were very appreciative of what the British did for them and wept on saying good-bye. They were keen, so many of them, to give "souvenirs," bits of shell, cartridges, etc., and we did not often refuse these presents. But this collecting of war mementos is a dreadful habit! One volunteer, a lawyer by profession, promised me a German officer's sword and took my Canadian address in order that he might send it to me "après la guerre." He says the weapon is quite safe as it is in a cellar, under a cellar, in Louvain!

I left La Panne only a few days before the Canadian nurses arrived, but have heard since that their sound training has been recognized by the Belgians, and that they have been very well liked.

The trip down by motor to Calais was not without interest, though one had made it several times before. Just outside the ramparts of Dunkerque, close to the canal which runs from Furnes, we could see where the first big German shell had fallen after its flight from a spot close to Dixmude, a distance of about twenty-four miles. The result of this shot was telegraphed back by wireless from a German aeroplane watching overhead and the next ones, after the range had been lengthened, destroyed many houses and killed many people near the railway station. One exploding shell lifted the steel rails high into the air and these came to rest on the roof of a nearby building. It seems almost incredible that these shells should weigh more than a thousand pounds. Dunkerque seemed a much quieter place than it was in November and December, 1914. Many of the inhabitants had left, the streets were almost empty, and the shutters were up on so many of the shops,

though it was a week-day afternoon. It is small wonder that some of the French people think that England has not yet realized what the war means. We went through the town of Dunkerque, out the other gate, and soon left the country of the sand dunes behind. We passed some large British motor transport-waggon on the hot, dusty road and saw "Tommies" sleeping on top of their load—others cheered to us. As somebody had remarked to me on another visit, "Calais does not seem a very interesting place to me, but there are a lot of people trying to get here." No doubt the Germans would at least make it interesting if they could! At Calais we had to visit the British Consul and the Naval Transport Officer, and spent the night. It is becoming increasingly more difficult to cross the channel by the Calais-Folkestone route. There were the usual number of British army officers coming home on leave and several members of the Friends' Ambulance Corps on board with whom I had worked last autumn. The sea was calm and the day bright and clear. The idea of hostile submarines scarcely entered our minds. We wondered if it was true that the Admiralty had submerged great wire nets for the protection of the passage.

Many Canadian troops were then, and are still, camped about Folkestone and on the way to London I saw some of the staff of No. 3 General Hospital (McGill), and at West Sandling No. 6 Canadian Field Ambulance with Col. R. P. Campbell in command. Everybody looked brown and extremely well and all were keen to get to the front. In Folkestone, too, I met some Queen's men who were there with the Stationary Hospital.

It had been my intention to join the R.A.M.C. in England, but in London I was asked to take charge of a country house, which was being offered to the War Office as a hospital for semi-convalescent officers, and for a month or so, whilst matters were in the hands of the War Office, I worked at a hospital for officers in Park Lane. People in England have been wonderfully good and very many private houses have been converted into hospitals, the families often having little or no room left to themselves. One of the best examples of this generosity is at Milton Hill near Oxford. Before the end of August, 1914, the house, with the riding school, was made ready to accommodate 160 patients; linoleum was put down on all the floors, the fine carved panels and book cases were boarded in, more baths were provided and sterilizers and an x-ray apparatus were put in. The "Tommies" are very happy, and when able to be up, may roam about the park and play cricket, croquet, bowls and other games. A Scotch surgeon

and his assistant are in residence there, and the government is relieved of a large expense, as the owner of the house and his brother pay for everything. I saw several Canadians there.

At London we had seventeen or eighteen beds and practically all the rooms on the ground floor were given up for wards and upstairs, too, there was a room for operations. The cases, on the whole, were not very serious, but we had one cheerful Irishman with compound and suppurating fracture of the upper third of the femur. A Scotchman was there who had been wounded by a rifle bullet, which had entered the left side of the thorax, narrowly missed the vertebral column, smashed the tenth rib on the right side not far from its angle, and the wound of exit was below the angle of the right scapula. The entrance wound healed readily, but there was a troublesome sinus leading from the exit wound. Three weeks after being wounded the left chest had to be drained of a large quantity of purulent fluid, by resecting a portion of the ninth rib. Evidently there had been a large effusion of blood into the chest, which later became infected and slides showed streptococci. It was fortunate that an operation was not necessary till quite late, as adhesions had evidently formed and the trouble was not allowed to extend to the right chest. His recovery has been uneventful.

It has been very interesting to compare the patients seen in England with those at La Panne. It may be taken as an axiom perhaps, that those who are more highly educated and those who hold positions of responsibility, must of necessity feel the "stress and strain" of this war more than the ordinary soldier. At La Panne the vast majority of patients were men or non-commissioned officers. It may have happened that they were very highly-strung by nature and could not be taken as fair examples of the British officer—but so many at Park Lane showed the "nervous" effects of the constant excitement of the life, and the din of the guns in Flanders to a remarkable degree. The French officer is much more excitable in battle, but it would seem as if this giving way to feelings acts as a kind of safety-valve, and that the calm and self restraint of the Britisher under fire is not proof that the after-effects are not greater and more serious in his case. Some of the officers in London were so "hipped" and had lost almost all self-control, that we had our hands full to cheer them up. One patient especially was extremely melancholy. There is a Special Officers' Hospital in London, now, for the treatment of cases of nerve shock. Many of these cases of course have not been wounded.

It was our policy at La Panne to clean up all wounds im-

mediately, and to remove every piece of metal whenever possible—though this procedure appears not to have been necessary in other wars. One is struck with the number of slowly healing sinuses in England, and in numerous cases one has to go in later and remove a fragment of shell or a bit of clothing, or on the other hand, if the foreign-body is left buried, healing and convalescence are so much the slower and officers are so much longer unfit for duty. However, we had one case in London where it would have been dangerous and folly to have tried to extract the piece of shell. It had entered the back over the spine of the left scapula, had fractured this, and had passed up beneath the deep muscles of the back of the neck and lay close to the vertebral column. This officer was wounded on May 16th, and ten days later, owing to rise in temperature and marked suppuration, the entrance wound had to be opened up widely, pus evacuated and a drainage tube inserted, but the metal could not be easily reached and was left in. There was still a small amount of discharge on the dressing and small spicules of bone came away till after July 15th—movement of the arms was remarkably good, however. In other cases, notably a persisting sinus in a thigh and a sinus in a forearm which lasted for over three months—the *x*-ray showed metal and necrosed bits of bone—more radical treatment at first instead of later would have much shortened the time of recovery.

One afternoon in London, after only a few hours notice, the King and Queen came to visit the hospital. They were both very interested in the patients and talked for a few minutes with each in turn. It seemed strange that the King should relate a "story" that he had heard about some German officers, and at the same time he said he did not know if it were true or not. And it was a rumour that we had all been discussing the previous day! The Queen especially asked questions of the doctors and nurses about hospital details, and examined minutely the material of which the ward screens were made.

London streets are full of wounded officers and men, and one meets numerous Canadians, and curiously enough I ran across a Canadian whose chest I had measured in Montreal in August, 1914. It seems the fashion to make a head dressing do instead of a service cap. They are all well entertained and many people spend every afternoon singing, dancing, or reciting for the wounded, and often theatre tickets are sent to the different hospitals and all who can, in uniform, mufti or in the blue hospital suits, go and enjoy themselves. We sent one officer off to his brother's church wedding in such a light blue hospital costume!

England is always the home of organizations and committees, and now there is one which provides carriages and motors for the wounded, another looks after the correspondence about officers' lost equipment, and so on. The scheme of the Canadian Red Cross for visitors to the wounded Canadians is a splendid one; lists of the Canadians are sent to prominent Canadian women or to women especially interested in Canadians and they visit and write a weekly report on the condition of the wounded in their district. Now, too, the Atlantic Union have provided funds to take Colonial soldiers in any British hospital out for drives. The names of the schemes to aid the wounded are legion and during the week August 16th to 23rd, "The National Egg Collection for the Wounded" attempted, and I think succeeded, in gathering together a million eggs, and illuminated posters were put up in all the villages of England.

The quietest places in London are disturbed by the war, and at the Royal College of Surgeons' Museum, Professor Arthur Keith showed me how some of the most valuable specimens were being removed to a place of comparative safety in the cellar against the arrival of the Zeppelins. It was feared that the Germans might drop incendiary and asphyxiating bombs and some householders always keep a supply of water and sand in readiness, and the number of respirators sold to London's citizens since the month of May must run into the hundreds of thousands. It was rather ludicrous to see a stout lady walking on the street in broad day light with one dangling from her parasol! However, things in London lately were no laughing matter.

The surgeons and physicians are naturally extremely busy with war work in England and those, who are members of the Territorial Force and who attend to their private work as well, deserve the highest praise. Many of them have been working at highest pressure since the beginning of the war—having to visit various military hospitals. The Harley Street man is often clad in khaki instead of the "customary suit of solemn black"—and so many have scarcely had a holiday in the last twelve or fourteen months.

We began work here about July 1st, in a large old country house in the county of Rutland—once the seat of the Earls of Nottingham and Winchilsea. There is accommodation for about twenty patients. This hospital is affiliated to the London District and exists in order to relieve the congestion of the hospitals there in times of heavy casualties. A colonel of the R.A.M.C. in London

has charge of all London officers' hospitals, and, of course, we were inspected by him before we opened. So far all our beds have never been filled and all over the country there has been less work than in the spring.

London is not always a very suitable place for officers getting well; there is too much excitement, and the authorities in London seem glad to send some of the cases here.

Rutland is a beautiful hunting country, and this year is rather empty, but the people who are here, are very kind and the officers are taken out for a drive and invited out for tea nearly every day. On Saturday we in our turn have visitors—but in the country the over anxious relative of the patient is almost unknown!

Practically all the officers have come from Flanders, but two were wounded on the Gallipoli Peninsula, or "on the Peninsula", as they call it. One patient was wounded in East Africa. With their first hand information one can realize the task which has been before the Allies at the Dardanelles. Nowhere can the soldiers find a place of safety from shells—even when resting down on the "beaches" they are exposed to the fire of the enemy. The modern sniper abounds upon the "heights" and often lies hidden in the heather behind the British trenches. There are an extraordinary number of German officers with the Turks, and, I believe, a non-commissioned officer with every machine gun. The Turk is a splendid fighter, they say, and we are glad to hear how well they often treat our wounded. Would that the Germans might take this kindness on the part of their ally to heart. The losses there have been terrific, as we all know, and the more lamentable when we realize that early in this year Achi Baba, and the other strong places were quite unfortified and the British middy was free to wander at will over the hills when off his ship. Naturally the Royal Army Medical Corps has to face a tremendous task as very little can be done for the wounded on land, and they must be almost immediately put on hospital ships and conveyed to Alexandria, to Malta, or sent direct to England. At Malta there are something like thirteen thousand beds.

Only five or six of the patients that we have had were in the regular army before the war, but were lawyers, in business, undergraduates, or volunteered on leaving school. One officer over forty years of age had seen twenty-four years of service, and was sergeant-major in a cavalry regiment up to a short time ago, when he received his commission as second lieutenant. It is splendid that these men should receive their reward and I suppose as never before a man may work up from the ranks.

Some of the surgical cases we have had have been very interesting, and this chiefly because of injuries to nerves. One man in the Gordons was wounded by shrapnel more or less all over his body. Several tiny fragments struck him just in front of the left ear injuring branches of the facial nerve. The left side of his face was not as full as the right, and the wrinkles were almost gone, there was a marked hollow beneath the left eye and, especially when out in a wind, tears ran over this cheek. He could not raise his left eyebrow, frown or properly close the eye. His smile was a curious one-sided affair and the teeth were not as well shown on the left as on the right side of his mouth. So characteristic was the picture of peripheral facial paralysis that probably his photograph will appear in a book (in the series of "Oxford War Primer of Medicine and Surgery") on "Injuries to Nerves," which is being written by Dr. Purves Stewart and Mr. Arthur Evans. Movement in the facial muscles was gradually returning when he left us.

It is curious how sometimes in a lesion of a nerve certain branches are picked out. In one case a rifle bullet had passed through the lower third of the right arm from the front and had fractured the humerus. The officer had wrist-drop, and we kept him on a splint with the hand markedly flexed dorsally in order that the strain might be taken off the extensor muscles. There were only two patches of anæsthesia, one about six or seven inches long and about three inches broad, which was situated on the external aspect of the elbow joint. It was very irregular in outline, and extended farther below than above the articulation, the other lay on the dorsum of the hand, and measured two by two and a half inches and was situated above the root of the first finger, and the cleft between the thumb and first finger. The lower border of the area of anæsthesia was just below the metacarpal-phalangeal joint of the first finger and a prolongation extended down the middle of the dorsal surface of the thumb as far as the nail. The palmar branch of the radial was not disturbed though later at the operation in London the surgeon found the musculo-spiral involved in scar tissue and thought that the bullet had severed the nerve, but could not be absolutely sure as all the tissues were so bound together. The nerve was isolated and a gap between the ends was bridged by turning down a portion from the proximal part and sutured to the peripheral. It is too early to foretell the final result.

I have seen Von Volkmann's contracture of the flexor tendons of the fingers for the first time here. This followed on a shrapnel wound and compound fracture of the middle third of the

ulna. A portion of the ulnar nerve was also injured and there was a patch of anæsthesia as a narrow strip below the wrist on the ulnar border of the hand, and little finger and extending for a short distance on to the palmar and dorsal aspects.

The two Dardanelles' cases spoken of above were both gunshot wounds of the head. One was of particular interest.

On June 6th, Capt. R. A. G. C., after being only five days on the Peninsula, was struck by a shrapnel bullet. This entered the skull just above and behind the left ear. On June 7th, he was taken on board a hospital ship at Lemnos and was conscious on admission. On this same day he had an epileptic seizure, which became general. The head was trephined and four fragments of the depressed bone were removed from the brain tissue. No attempt was made to remove the bullet. Lumbar puncture showed turbid fluid and there was rigidity of neck and Kernig's sign was present. Up till June 14th, when he reached Malta, he had several Jacksonian attacks daily. It was noted at Malta that the seizures began in the right facial muscles and spread to right arm, right leg, and then became general; patient lost consciousness, was very cyanosed and frothed at the mouth. There was some retraction of the head and temperature was 100°, and pulse 100. Marked Kernig and Babinsky. The wound was more widely opened up, but lumbar puncture showed clear fluid and no growth was obtained. The temperature dropped and the last epileptic attack was on June 16th. He now became much clearer mentally, but it was noted in his report that he had word deafness, could speak, but on making use of a wrong word or on mispronouncing one, he did not notice his mistake. The operation wound was healed by June 26th. On July 8th, he could write much better, but had difficulty in spelling. Could read to himself, but not aloud. The bullet was located by x-ray on July 15th, and lay at the level of the external occipital protuberance, a little to the left of the middle line. His vocabulary at this time was increasing but there was some loss of memory. The patient left for Gibraltar on August 2nd, and after spending about two weeks there, came to England. After a week in London he was sent to us here as he was in a very excitable condition. When the officer reached here on August 30th there was a circular depression about two and a half inches in diameter at the site of operation, the floor of which pulsated. He still had difficulty in finding certain words and in reading aloud, occasionally mispronounced long words such as "mathematical." Memory was good for recent events and those which occurred some years since.

Nothing was found wrong with any of the cranial nerves except the second, which will be discussed later. In the limbs and trunk the motor and sensory systems showed no change from the normal, and there were no abnormal reflexes. His gait was steady and he could stand steady with feet together and eyes closed. On questioning him about his eyesight, he complained that in holding a book in the ordinary way he was unable to see the last few words at the end of the lines, but had to rotate his head slightly to the right in order to read these words. First, with the rough test with the finger tip, and then by mapping out the visual fields of both eyes on a black cloth, I found a marked grade of homonymous hemianopia—or restriction of the upper nasal quadrant of the visual field of the left eye and of the upper temporal quadrant of the right one. It will be interesting to note if any improvement occurs as the other day he walked into the corner of a white wall, which was to his right hand. The pupils reacted to light thrown on to the retinae from all angles and this fact would lead one to diagnose a lesion behind the optic tract and basal ganglia in the course of the fibres as they run into the caudate lobe.

We have had five cases of "nerve shock" with more or less serious symptoms. In only one case was there an actual wound. The majority complained that they were "blown up" by a shell or that a shell burst very close to them. The commonest symptom complained of was headache from which three suffered. Two claim that they were unconscious for a time when first "concussed." Two complained of muscular weakness and exhaustion and of indefinite pains in the limbs. One suffered from giddiness and one showed marked change in his speech and could scarcely walk. The previous histories of most of these cases is interesting and points to an "unstable nervous system", if one may be allowed to use such a phrase. In one instance it was the second time that the officer had returned from Flanders with "nerve shock."

One case, that of a lieutenant, is perhaps worth recording. Several times before the war began he had suffered from, as he describes it, "brain fag," and there was some illness commencing about 1909, when he was laid up in France under the care of a physician and nurse for two and a half years. It would appear that there was something about this sickness which he seeks to hide and very little more can be learned from the patient than that he was greatly "collapsed," and "run down." On May 9th, he states that he was "blown up by a shell", and according to his version of the story was unconscious for four days, and after

recovery of his senses he had difficulty in seeing objects and often they appeared double. He suffered from severe headache. He thought his spine was injured and was unable in the London hospital, and still is unable, to walk except with head and body bowed forward, his knees bent and has difficulty in lifting up his feet to mount a step. Progression is very slow and only possible with the aid of two canes. He arrived here on July 25th, and showed a peculiar hesitancy and sometimes stuttering of speech and these defects were markedly accentuated when he became excited or in talking to a stranger. He is a very highly-strung individual and quickly flies into violent fits of anger, has a very active vaso-motor system, and very quickly flashes up. The pupils react to both light and accommodation and the cranial nerves show no abnormality except that he has an almost insensitive soft palate and pharynx. Though he says he cannot hold himself erect when standing, he immediately straightens out somewhat on putting him to bed. The upper limbs show nothing abnormal, and in the trunk, except that sensation is very much dulled over the back, especially over the lumbar muscles close to the spine, there is nothing worthy of note. The lower limbs are kept slightly flexed at the knees. There is some rigidity, but on asking him to relax the muscles the limbs are freely movable at all the joints. However, the patient cannot by himself extend the legs if the knee is flexed for him nor bend up the knees if the lower limbs are straightened out by the examiner. It would be impossible for him to do these things as he always contracts the antagonistic muscles in his efforts at flexion and extension. During these attempts he breathes hard and grasping the sides of the bed tightens up his arms. The knee jerks are generally slightly increased, but vary from day to day. There is no patellar or ankle clonus and the Babinsky phenomenon is absent. There is dulness of sensation to pin prick in the legs, but no "stocking anaesthesia." He has had daily massage, but has not improved greatly. He is a difficult case on account of his fits of temper and the nurses have done well to manage him at all. It is a hard matter to make him eat, especially if he has been "crossed" in any way. One evening he had an hysterical attack which began slowly with deep inspiratory efforts, later there were irregular movements of the arms and he would hold his breath as long as possible, and at times he grasped the top of the bed. The pupils were equal and somewhat dilated and reacted to light. There was no micturition. The attack lasted for about half an hour and we left him with the light turned down. He says he remembers everything that happened and the

next morning was very keen to know "if the doctor was alarmed." Fortunately he has had no more of these attacks. For his back we are going to try a supporting jacket—as Sir William Osler suggested—with the suggestion that it will "strengthen the muscles." The outlook, one must confess, does not appear to be particularly bright and if we could get something definite about his previous long illness an accurate prognosis might be made.

This hospital will not be kept open after the cold weather begins, as most of the patients have not been very ill and it would be a very difficult matter to keep the officers occupied or amused. However, after a period close to the firing line these last three months or so have been good experience, and have served to show another side of the picture.

T. A. MALLOCH.

BURLEY-ON-THE-HILL, RUTLAND, September 25th, 1915.

Canadian Literature

ORIGINAL CONTRIBUTIONS

The Canadian Journal of Medicine and Surgery, September, 1915:

The treatment of eclampsia G. C. Copeland.

The Canadian Journal of Medicine and Surgery, October, 1915:

Hæmorrhage into the lateral ventricle:
recovery G. E. Jurben Lannin.

Disabilities, including injuries caused by
bullets, shrapnel, high explosives, etc.,
as illustrated by cases examined before
a medical board at Canadian Head-
quarters, Shorncliffe, England A. Primrose.

Dominion Medical Monthly, September, 1915:

Cancer of the uterus with special refer-
ence to diagnosis G. Stewart Cameron.

Some observations on blood pressure A. T. Emmerson.

The Canadian Journal of Medicine and Surgery, September, 1915:

The treatment of eclampsia . . . G. G. Copeland.

L'Union Médicale du Canada, August, 1915:

Pasteur. Sa vie, son oeuvre, 1822-1893 . A. LeSage.

Le Bulletin Médical de Québec, September, 1915:

Le developpement de l'enfant . . . A. Jobin.

Pellagre . . . L. G. Pinault.

Pneumothorax artificiel. (Statistique) . E. Grenier.

Le Journal de Médecine et de Chirurgie, August, 1915:

Le traitement de la tuberculose pulmon-
aire par la méthode de Forlanini . E. Grenier.

Dominion Medical Monthly, October, 1915:

The treatment of eclampsia . . . G. C. Copeland.

The Canada Lancet, September, 1915:

Treatment of the fever heart . . . H. B. Anderson.

The method of dealing with tuberculosis
in the public schools of Toronto . A. McKay.

How shall we enforce a better observance
of quarantine? . . . C. F. Laurie.

Medical Societies

TORONTO ACADEMY OF MEDICINE

AN interesting address was given before the Academy of Medicine by Dr. W. P. Manton, of Detroit, on Tuesday, October 5th, "Marriage rites and obstetrical practices amongst the ancient Romans." On this occasion two volumes of Ancient Works in Medicine were presented to the Academy by Sir William Osler, through Dr. J. H. Elliott. Dr. C. J. Algernon Temple, a former professor of gynæcology in the University of Toronto, was elected an honorary Fellow of the Academy. Dr. W. H. B. Aikens, presided.

ONTARIO MEDICAL ASSOCIATION

It seems fitting that the Ontario Medical Association should make plans early for the annual convention, to be held in Toronto, in May, 1916. Work is now being done, not only to insure success at the next meeting, but also to coöperate with the profession throughout the province in the organization of county medical societies along the lines approved of by the Peterborough meeting. The latter is a big task but seems well worth while and should commend itself to the profession.

In carrying out this campaign the Ontario Medical Association will be living up to the best traditions of its founders, and in this connexion a quotation from one of the Canadian medical journals of 1882 may not be out of place—"The Ontario Medical Association should promote sentiments of mutual respect and fraternity, the plentiful lack of which there is still great reason to deplore." It is the intention of the present executive to do what they can to remedy the faults existant in 1882 which still survive in an attenuated form in 1915.

It is interesting here to note that the association has been in existence since 1880 and has held meetings since 1881. Dr. Adam Wright and Dr. J. E. Graham first conceived the idea of a provincial organization. At a preliminary meeting held to consider the matter of organization were Drs. Workman, Coventor, Graham, and J. H. Burns, Adam Bright and J. E. White. The first president was Dr. Workman. For thirty-five years the association has prospered. There seems to be no doubt that the executive, with the coöperation of the members, will not allow the organization to languish even though under the stress of war conditions.

PERTH COUNTY MEDICAL ASSOCIATION

THE quarterly meeting of the Perth County Association was held in the Town Hall at St. Mary's, Ontario, on Wednesday, October 13th. The attendance was good. The chair was taken by Dr. C. F. Smith, of St. Mary's, and papers were read by Dr. Hadley Williams, of London, on "The diagnosis of serious abdominal diseases," and Dr. W. F. Brown, of St. Mary's, on "Three obscure cases of disease of the nerves." It was decided to present Dr. McKenzie, son of Dr. A. F. McKenzie, of Monkton, with a gold wrist watch on the occasion of his leaving for service with the Royal Army Medical Corps.

Medical Societies

- CANADIAN MEDICAL ASSOCIATION:—President—Dr. Murray MacLaren, St. John, N.B. President-elect—Dr. R. E. McKechnie, Vancouver. Secretary-treasurer—Dr. W. W. Francis, 836 University Street, Montreal.
Annual Meeting, Vancouver, B.C., 1915, postponed.
- ACADEMY OF MEDICINE, TORONTO:—President—Dr. W. H. B. Aikins, 134 Bloor Street West. Secretary—Dr. J. H. Elliot, 11 Spadina Road.
- ALBERTA MEDICAL ASSOCIATION:—President—Dr. T. H. Whitelaw, Edmonton. Secretary—Dr. F. C. Clarke, Calgary.
- ASSOCIATION OF MEDICAL OFFICERS OF THE MILITIA:—President—Lt.-Colonel A. T. Shillington, A.M.C., Ottawa. Secretary—Captain T. H. Leggett, A.M.C., Ottawa.
- BRITISH COLUMBIA MEDICAL ASSOCIATION:—President—Dr. J. Glen Campbell, Vancouver. Secretary—Dr. H. W. Riggs, Vancouver.
- CALGARY MEDICAL SOCIETY:—President—Dr. W. A. Lincoln. Secretary—Dr. H. A. Gibson. Treasurer—Dr. H. H. Johnson.
- CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS:—President—Dr. J. G. Adami, Montreal. Secretary—Dr. George D. Porter, Ottawa.
- CANADIAN HOSPITAL ASSOCIATION:—President—Dr. H. A. Boyce, Belleville. Secretary—Dr. J. N. E. Brown, Toronto.
- CANADIAN PUBLIC HEALTH ASSOCIATION:—President—Dr. C. J. Hastings, Toronto. Secretary—Dr. O. Withrow, Lumsden Building, Toronto.
- CENTRAL SOUTHERN ALBERTA MEDICAL SOCIETY:—President—Dr. J. S. Murray, Okotoks. Secretary-treasurer—Dr. G. E. Learmonth, High River.
- COLCHESTER-HANTS MEDICAL SOCIETY:—President—Dr. J. W. T. Patton, Truro. Secretary—Dr. H. V. Kent, Truro.
- EDMONTON ACADEMY OF MEDICINE:—President—Dr. C. U. Holmes. Secretary-treasurer—Dr. E. L. Garner. Library, 12 Credit Foncier, Building.
- ELGIN COUNTY MEDICAL ASSOCIATION:—President—Dr. D. A. Cameron, Dutton, Ont. Secretary-treasurer—Dr. A. B. Riddell, Bayham, Ont.
- FRASER VALLEY MEDICAL SOCIETY:—President—Dr. DeWolfe Smith. Secretary—Dr. D. F. Carswell.
- HALIFAX MEDICAL ASSOCIATION:—President—Dr. K. A. McKenzie. Secretary—Dr. F. V. Wood.
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